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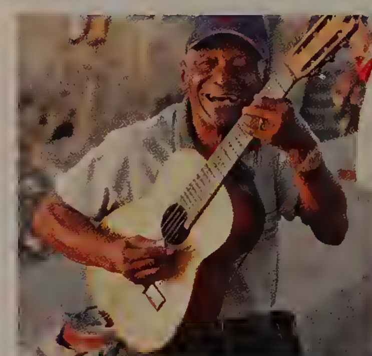

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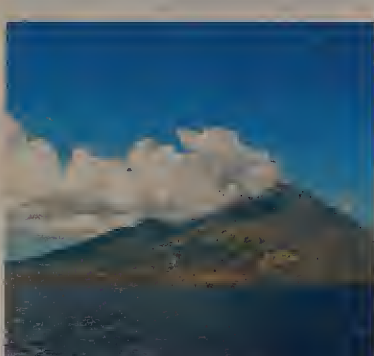

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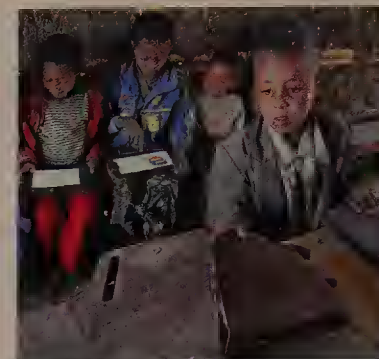

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Politics

Gunmen from the Shabab Islamist militia in Somalia attacked a university 145km (90 miles) across the border in **Kenya**, killing at least 148 people. It was the country's worst act of terrorism since the bombing of the American embassy in Nairobi in 1998. In their spree, the gunmen targeted Christians, separating them from their Muslim classmates, before they themselves were killed fighting Kenyan security forces. Kenyan military jets bombed two camps in Somalia used by the Shabab.

Iran and six world powers (America, Russia, China, Britain, France and Germany) agreed on the "parameters" of a deal to limit the Iranian nuclear programme in return for the lifting of sanctions. Iran's "breakout capability"—the time needed to make the fissile material for an atomic bomb—would be extended to about a year, a condition that would hold for a decade. There would also be a tougher inspection regime. But several crucial issues still need to be settled and much hard bargaining lies ahead if a final deal is to be reached by the June 30th deadline. Critics in America's Congress are pushing for fresh sanctions.

Rahm home to victory

Rahm Emanuel won the run-off in **Chicago's** mayoral election, handily beating his opponent, Jesus (Chuy) Garcia, by 56% to 44%. An exit poll showed that those Chicagoans who fretted most about the perilous state of the city's finances voted for Mr Emanuel by a margin of more than two-to-one.

California brought in the state's first-ever mandatory restrictions on water use following four years of drought. The restrictions will fall mostly on urbanites, who use 10% of the water. Farms, who use 40%, will be relatively unscathed. (The rest is reserved for environmental purposes.)

Dzhokhar Tsarnaev was found guilty of bombing the **Boston marathon** in 2013, an attack that killed three people and wounded more than 250 others. Mr Tsarnaev carried out the attack with his brother, who was killed when police tried to apprehend him.

A **police officer** was charged with the murder of an unarmed black man in a suburb of Charleston, South Carolina, soon after a video emerged of the officer apparently shooting the man as he was running away. The officer claims the man had taken his stun gun. The swift decision to prosecute for murder comes amid a national debate on the policing of black communities, prompted by the fatal shooting of Michael Brown in Ferguson, Missouri, last August.

Rand Paul threw his hat into America's presidential race, the second Republican officially to announce that he is running. Meanwhile, the clock started ticking for **Hillary Clinton** to declare formally after she rented offices in Brooklyn for her national campaign headquarters.

The holiday's over

The United States deported to **El Salvador** a former general who has been held responsible for torture and killings during the country's civil war in the 1980s. Eugenio Vides Casanova, who was head of El Salvador's national guard, had lived in Florida since 1989. Under an amnesty law he will not be tried at home.

Consumer prices in **Brazil** rose at their fastest rate since 2003. Inflation in the year to March was 8.1%, mainly because of higher prices for food and energy. Part of the increase comes from a decision to reduce subsidies for electricity prices, which the government had kept artificially low for political reasons.

At least 25 people died in floods in and near **Chile's** Atacama Desert, normally one of the driest areas on Earth. Emergency workers recorded another 125 people missing and 2,700 homeless. The president, Michelle Bachelet, reckons the government will have to spend at least $1.5 billion to repair the damage.

Any friend will do

Alexis Tsipras, the prime minister of **Greece**, visited Moscow to discuss economic co-operation with Vladimir Putin. European countries worried that Mr Tsipras might offer to obstruct sanctions against Russia in exchange for aid to repay Greece's colossal debts; he said no such deal was on the table. But Greece's cash crunch is becoming ever tighter, and the country could run out of money to repay its debts as early as next month.

A Polish radio station released transcripts from recordings made in the cockpit of the plane that crashed in 2010, killing **Poland's** president, Lech Kaczynski, and 95 others. The transcripts provide evidence that officials on board the plane pressured pilots to attempt to land despite dangerous conditions. The emergence of the recordings has intruded on campaigning in Poland's presidential election, scheduled for May 10th.

Marine Le Pen, the leader of the National Front in **France**, withdrew the party's support from her 86-year-old father Jean-Marie Le Pen, who founded it. Mr Le Pen had made controversial statements downplaying the significance of the Holocaust and called Manuel Valls, the French prime minister, an "immigrant" (he was born in Spain). Ms Le Pen decried her father's statements as "political suicide".

Turning to Asia

America's secretary of defence, Ashton Carter, began a tour of **Asia** in an attempt to breathe new life into America's "pivot" towards the continent. He started his tour in Japan, where he warned countries about the risks of conflict over claims to disputed islands in the East and South China Seas.

In **India** 20 people were shot dead by police for allegedly cutting down red sandalwood trees, whose wood is highly sought after in East Asia by furniture-makers and other trades. Smuggling red sandalwood is a lucrative business, but confrontations between loggers and the authorities are not usually deadly.

An explosion tore through a factory that produces paraxylene (PX), a chemical used in plastics among other things, in the **Chinese** city of Zhangzhou. Last year violent protests erupted in a city in Guangdong province against the construction of a new PX plant.

In **Beijing** a group of 30 taxi drivers took their protest against new restrictive laws on renewing licences to the extreme by poisoning themselves with chemicals in an apparent mass-suicide attempt on a busy shopping street. The men had travelled to the capital from the north, near the border with Russia. They all survived.

Business

Shell said it would buy **BG Group**, an oil-and-gas company based in Britain, for £47 billion ($70 billion), the biggest sign yet of the pressure to consolidate on the energy industry following the sharp fall in oil prices. BG's share price had dropped by over 30% since last summer, making it a tempting takeover target. Shell's acquisition will increase its energy reserves by 25% and make it the world's third-biggest producer of liquefied natural gas.

Interventionist, moi?

In an all-French affair Vivendi, a media group, started exclusive talks with Orange, which used to be known as France Telecom, to buy its **Dailymotion** video-sharing website. The French government did little to assuage critics who think it meddles too much in business matters when it blocked any attempt by Orange, in which it holds a 25% stake, to sell Dailymotion to a foreign bidder.

Separately, Vivendi said it would return €6.8 billion ($7.3 billion) to shareholders, resolving a dispute with P. Schoenfeld Asset Management, an **activist hedge fund** that had put pressure on the company to pay out more to investors.

In a busy week for the French government, it also temporarily increased its stake in **Renault** by 4.7% to 19.7% in order to get the carmaker to adopt a rule at its annual meeting that gives double voting rights to long-term investors who have held shares for at least two years. The rule became law last year but Renault has resisted implementing it.

Hong Kong's Hang Seng stockmarket index soared, jumping above 27,000 for the first time since January 2008, thanks in part to rising trading volumes on the Shanghai-Hong Kong Stock Connect scheme, which links the mainland and Hong Kong markets. Volumes had been disappointing since the link's launch last year, but it has been boosted by a government decision to allow domestic mutual funds to use it.

In another blockbuster deal in the drug industry, **Mylan** tendered an unsolicited $29 billion offer to buy **Perrigo**. Both companies used to be based in America but moved their registered offices to European countries to take advantage of lower corporate tax.

FedEx was confident that it could surmount any competition concerns in Europe over its $4.8 billion bid for **TNT Express**, a delivery company based in the Netherlands that has operations in 40 countries. UPS, FedEx's main rival in America, tried to buy TNT in 2012, but Europe's antitrust regulator withheld its approval. FedEx believes its deal is different; it wants to combine its air-delivery service in Europe with TNT's extensive road-based logistics network.

The **IMF's** latest "World Economic Outlook" report warned that many countries face lower economic "speed limits", ie, reduced potential for growth, and should "adjust to a new reality" of stagnant living standards. In rich economies the fund reckons that ageing populations will be the biggest hindrance to the type of expansion seen in the 1990s and 2000s, whereas slower productivity in emerging markets will be the main factor holding those countries back.

A collaborative effort

Jim Yong Kim, the president of the World Bank, gave his strongest backing yet to the new **Asian Infrastructure Investment Bank** that has been proposed, and will be led, by China. America has raised concerns about transparency at the AIIB, even though many of its allies have signed up. Mr Kim plans to place the issue high on the agenda of the forthcoming spring meeting of the World Bank and IMF.

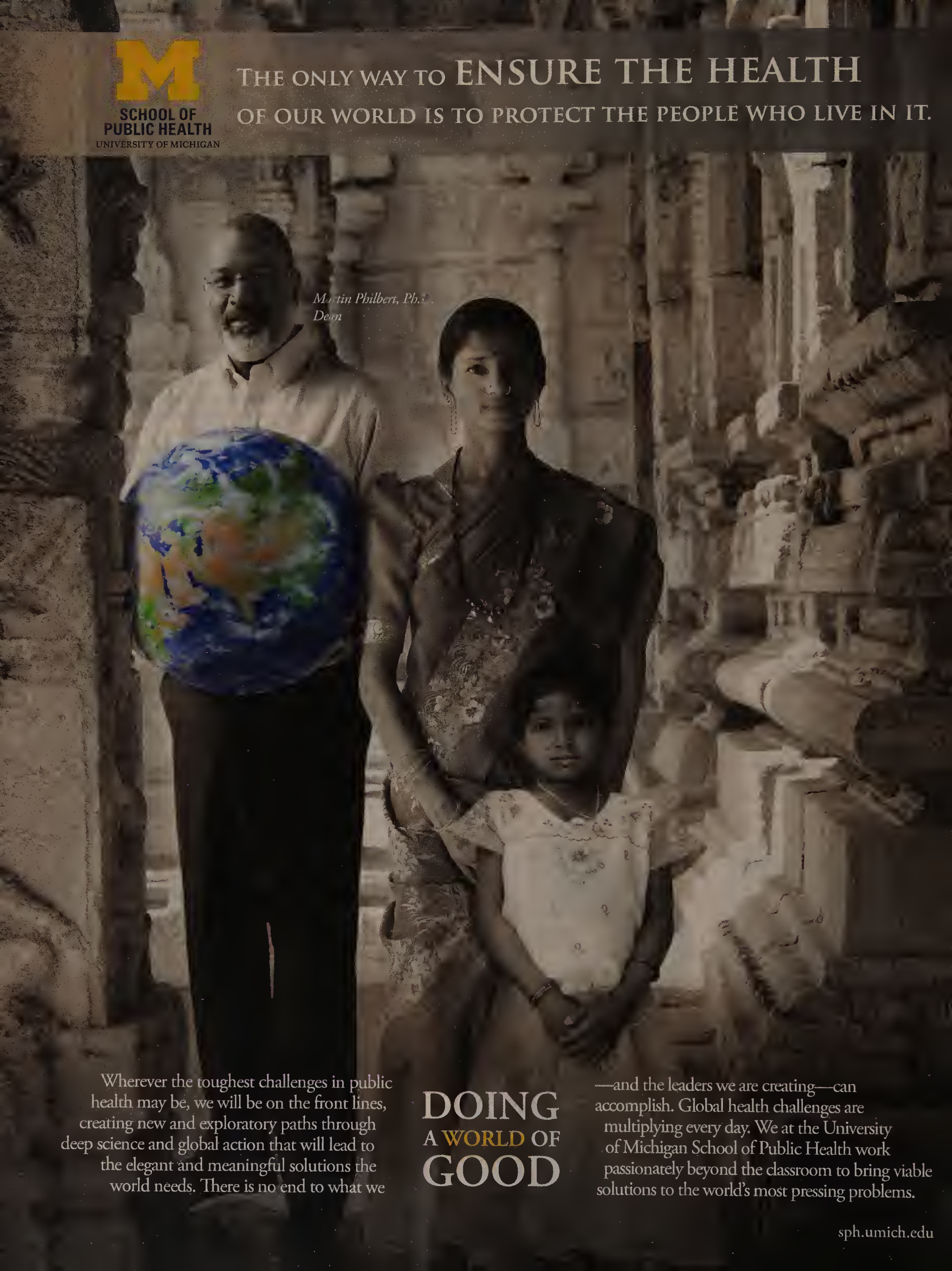
Switzerland became the first country to date to issue a ten-year sovereign bond with a **negative yield**. This is part of a general move in Europe towards negative yields (marked in some bonds with maturities shorter than ten years) prompted by fears of deflation and the European Central Bank's quantitative-easing programme.

Ramalinga ding-dong

Ramalinga Raju, the founder of Satyam Computer Services, was found guilty along with nine others of accounting fraud in India's biggest corporate scandal to date. His misconduct came to light in 2009 when he admitted that Satyam's books had been cooked for years, and that a $1 billion cash pile did not exist.

Investors cheered **Samsung's** announcement that it expects to make an operating profit in the first quarter of 5.9 trillion won ($5.4 billion). Although this will be around 30% less than in the first three months of 2014, it improves on profit for the middle part of last year, when Samsung's stock was hammered as it lost market share to low-cost Chinese rivals. Its share price has risen by 35% since October. This week sees the release of Samsung's Galaxy S6, for which advance orders are heavy.

Other economic data and news can be found on pages 83-84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What does Hillary stand for?

The most familiar candidate is surprisingly unknown

ANY day now, Hillary Clinton is expected to declare that she is running for president. For most Americans this will be as surprising as the news that *Cinco de Mayo* will once again be on May 5th. Mrs Clinton has had her eye on the top job for a long time. She nearly won it in 2008 and is in many ways a stronger candidate now. She and her husband have built a vast campaign machine. The moment Mrs Clinton turns the key, it will begin openly to suck up contributions, spit out sound bites and roll over her rivals. Some think her unstoppable: Paddy Power, an Irish bookmaker, gives her a 91% chance of capturing the White House in 2016.

Steady on. The last time she seemed inevitable, she turned out not to be. The month before the Iowa caucuses in 2008, she was 20 points ahead of other Democrats in national polls, yet she still lost to a young senator from Illinois. She is an unsparkling campaigner, albeit disciplined and diligent. This time, no plausible candidate has yet emerged to compete with her for the Democratic nomination, but there is still time. Primary voters want a choice, not a coronation (see page 25). And it is hard to say how she would fare against the eventual Republican nominee, not least since nobody has any idea who that will be. The field promises to be varied, ranging from the hyperventilating Ted Cruz to the staid Jeb Bush. Rand Paul, a critic of foreign wars and Barack Obama's surveillance state, joined the fray on April 7th (see page 28). Still, Mrs Clinton starts as the favourite, so it is worth asking: what does she stand for?

Air miles and briefing books

Competence and experience, say her supporters. As secretary of state, she flew nearly a million miles and visited 112 countries. If a foreign crisis occurs on her watch, there is a good chance she will already have been there, read the briefing book and had tea with the local power brokers. No other candidate of either party can boast as much.

She also understands Washington, DC, as well as anyone. For eight years she was a close adviser to a president (her husband) who balanced the budget and secured bipartisan agreements to reform welfare and open up trade in North America. Afterwards, as a senator, Mrs Clinton made a habit of listening to, and working with, senators on both sides of the aisle, leading some Republicans publicly to regret having disliked her in the past. A President Hillary Clinton could be better at hammering out deals with lawmakers (of both parties) than President Obama has been. She would almost certainly try harder.

But to what end? For someone who has been on the national stage for a quarter-century, her beliefs are strangely hard to pin down. On foreign policy, she says she is neither a realist nor an idealist but an "idealistic realist". In a recent memoir, she celebrates "the American model of free markets for free people". Yet to a left-wing crowd, she says: "Don't let anybody tell you, that, you know, it's corporations and businesses that create jobs." (An aide later said she meant tax breaks for corporations.) Some candidates' views can be inferred from the advisers they retain, but Mrs Clinton has hundreds, including luminaries from every Democratic faction. Charles Schumer, her former Senate colleague from New York, called her "the most opaque person you'll ever meet in your life".

Mrs Clinton's critics on the right fret that she is a power-hungry statist. ("Give her an inch and she'll be your ruler," warns a campaign badge.) On the left they fear that she is close to Wall Street (her campaign is predicted to raise $1 billion), divorced from the lives of ordinary Americans (she first moved into a governor's mansion in 1979) and hawkish (she backed the invasion of Iraq). Perhaps she is something in between: a sensible moderate? She fits this bill better than, say, Elizabeth Warren or Martin O'Malley, two possible Democratic rivals who bash trade and banking. But voters need to know more.

The last time Mrs Clinton set out a detailed economic plan, during the 2008 campaign, she placed herself a little to the left of her husband in the 1990s (less keen on trade deals, for example) and quite close to where Mr Obama has ended up (indeed, Obamacare resembles her plan more than his). The world has since changed, and Democrats are furiously divided over how to ease inequality without constricting growth (see page 29). The Centre for American Progress, one of the think-tanks Mrs Clinton listens to, recently released a list of policies to promote what it calls "inclusive capitalism". This contains lots of sensible stuff, such as boosting investment in infrastructure and expanding wage subsidies for hard-up workers; some intriguing ideas, such as encouraging "works councils" to bring labour and management together; and some dubious ones, such as ramping up implied subsidies for mortgages and creating make-work schemes for the young. How much of this would Mrs Clinton favour? Some details would be nice.

On foreign policy, Mrs Clinton's pitch is that she would be tougher than Mr Obama. She backed his surge of troops in Afghanistan but regretted the expiry date he put on it. She urged him to arm the non-Islamist rebels in Syria; he dithered. She chides him for failing to find a better organising principle for foreign policy than "Don't do stupid stuff." Yet she leaves many details unfilled. For example: does she think she could have struck a better nuclear deal with Iran? Nonetheless, many foreigners would welcome an American commander-in-chief who is genuinely engaged with the world outside America.

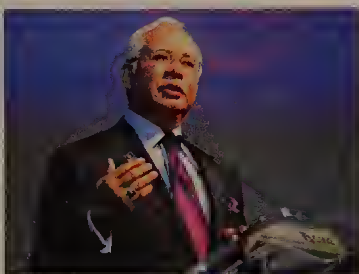
Secrecy and privilege

Sceptics raise two further worries about Mrs Clinton. Some say she is untrustworthy—a notion only reinforced by the revelation that she used a private server for her e-mails as secretary of state, released only the ones she deemed relevant and then deleted the rest. The other worry, which she cannot really allay, is that dynasties are unhealthy, and that this outweighs any benefit America might gain from electing its first female president. Gary Hart, a former presidential candidate, told *Politico* that, with more than 300m people in America, "We should not be down to two families who are qualified to govern." The campaign has barely begun, but if Mrs Clinton is to deserve the job she desires, she has questions to answer. ■

Repression in Malaysia

Disconnect

A thuggish government is playing racial politics. Najib Razak should be dressed down



MALAYSIA'S prime minister, Najib Razak, paints his country as a model of moderate Islam—a multicultural democracy and a beacon of tolerance. He has spoken of scrapping oppressive British-era laws and nurturing a creative economy. Meanwhile, his spin-doctors explain that their liberal master is the man to vanquish the reactionary forces in his political party, UMNO, which has never been out of power and which is prone to cronyism and political thuggery. Barack Obama, for one, buys this story. He is the first American president since 1966 to have visited Malaysia. And late last year in Hawaii he enjoyed a round on the golf links with Mr Najib. The two men are said to click. The White House gushes about a "growing and warming relationship" between America and Malaysia.

Race to the bottom

Yet it is time to call Mr Najib out on the widening gulf between spin and substance. On the economic front is a growing scandal over dubious connections and misused funds at a national investment fund, 1MDB, that Mr Najib launched and which is now burdened with $12 billion of debts. Malaysia's human-rights record is of even greater concern. Three years ago Mr Najib scrapped a notorious colonial law, the Internal Security Act, which allowed indefinite detention without trial. This week he, in effect, reintroduced it. The new Prevention of Terrorism Act allows suspects to be detained indefinitely. Though it is aimed ostensibly at jihadists, lawyers and civic groups are appalled at the law's sweep (see page 36).

This fits a pattern. The coalition that Mr Najib leads uses foul as well as fair means to keep the opposition down. In the most recent election, in 2013, it lost the popular vote for the first time. Yet it held on to power thanks to gerrymandered voting districts. Even after that dubious victory, it continued to persecute the charismatic opposition leader, Anwar Ibrahim, who in February was sentenced to five years on trumped-up charges of sodomy. American criticism was perfunctory.

In the past year growing numbers of activists and opposition figures have been arrested under the Sedition Act, another colonial law aimed originally at advocates of independence. Mr Najib, who once promised to remove it from the statute book, now plans to strengthen it with harsher punishments and a clause forbidding speech that denigrates Islam.

Among those already arrested under the Sedition Act are opponents of *hudud*, corporal and capital punishments, including stoning to death for adultery, laid down in Islamic law. *Hudud* does not apply in Malaysia, but Islamists from an opposition party want it introduced in Kelantan state in the north-east. The government does not like the idea but is quietly supporting it in a cynical ploy to widen splits in Pakatan Rakyat, the opposition coalition struggling without Mr Anwar.

By encouraging the Islamists, the government is fanning racial and religious divisions in a majority-Malay (and Muslim) country with large ethnic-Chinese and ethnic-Indian minorities. In 1969 bloody race riots nearly tore Malaysia apart. Playing racial politics could be disastrous in this multiracial country. A better and more enlightened way for Mr Najib to boost UMNO's prospects would be for him to repair its image with ethnic Chinese and Indians.

Malaysia's friends should be blunter about this where they have been mealy-mouthed. They should condemn Malaysia's corruption, its decaying freedoms and its racial politics. They should call for both the Sedition Act and unlimited detention to go. Until matters improve, not only should golf be off the agenda; so too should the prime minister's hoped-for trip to Washington this year. ■

The euro-zone revival

Don't get europhoric

Investors are becoming excited about Europe again—too excited

RECOVERY (*noun*): restoration to a former or better condition. The euro zone is at last enjoying an upturn. Economists are savouring the unaccustomed pleasure of revising their growth forecasts up, rather than down. Surveys of business activity have reached a four-year high and euro-area consumers are feeling a lot more confident. Investors are excited, too. Money is rushing into the region's stockmarkets. In March European equity funds notched up record inflows.

Alas, the euro zone is still a long way from meeting the dictionary definition of a recovery. Indeed, investors' swing from gloom to europhoria appears already to have gone too far.

To start with, the recovery remains remarkably weak. The euro area has actually been growing for two years since an extended double-dip recession ended in early 2013. Yet the expansion has been so desultory that it barely deserved the name. The excitement generated by growth of just 0.3%, an annualised rate of little more than 1%, in the fourth quarter of 2014 tells its own story of shrunken expectations. So feeble has the recovery been that euro-zone GDP in late 2014 was still 2% below its previous pre-crisis peak in early 2008. By contrast, America's output is higher by almost 9%.

Having lost so much ground, the euro area clearly has enor- ▸▸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mous scope to catch up. Yet its recent improved showing depends on two engines that are likely to run out of steam. The first is the oil-price collapse in the second half of 2014, which has acted like a tax cut for consumers and businesses. That stimulus will fade towards the end of this year, and will go into reverse if oil prices move up again.

The second engine is the fall in the euro, by 12% on a trade-weighted basis over the past year. Many European firms have done a good job of expanding their foreign sales in recent years (see page 61); they will do well from a weaker currency. But the euro has stopped falling (at least for the time being) and, in the long run, what matters more for exporters is growth in their trading markets. With China slowing and the American economy causing concern (see page 65), the outlook is less favourable. Ideally, recovery would also be based on strong demand within the euro area—especially in Germany, which is running a current-account surplus of over 7% of GDP.

True, investors will continue to benefit from the European Central Bank's generous programme of quantitative easing (QE), which began in early March. QE has boosted equity and bond markets—Germany's DAX index is up by more than 20% since the start of the year, for example. But banks play a bigger role than capital markets in providing funds to euro-zone companies and households. And although lending to the private sector is beginning to edge up, loans to firms are still falling.

Moreover, one of the main achievements in improving euro-zone governance, the creation of a single banking supervisor under the auspices of the ECB, is a double-edged sword. Compared with complaisant national regulators, it is more insistent that banks are strong: witness an incipient clampdown on the use of deferred tax assets (a kind of credit to offset past losses) to bolster the capital bases of banks in Europe's weaker economies. Welcome though that is, credit will not take wing while banks are still repairing their balance-sheets.

Grexcruciating

And don't forget Greece. Markets have been insouciant about the tensions between the radical-left government of Alexis Tsipras and the rest of the euro zone. Greece is running too short of cash to be confident of avoiding a "Grexit". The fraught negotiations between Greece and its European creditors highlight how hard it is to reconcile the interests of the currency union's disparate members.

After years of bad news it may seem churlish to belittle signs of brighter prospects. Countries like Italy (see page 47) have made welcome efforts at reform; the QE programme is useful in bolstering inflation expectations. But neither France, the second-biggest economy in the currency bloc, nor Italy, the third-biggest, is expected to muster growth above 1% this year. And the longer-term prospects for the euro area remain weighed down by excessive debt and low productivity growth, as well as the threat of deflation and disadvantageous demography (Germany's working-age population will be shrinking as fast as Japan's by 2020). According to the IMF, the euro area's potential rate of growth has deteriorated since before the financial crisis of 2007-08 by more than that of other advanced economies. However welcome, an upturn should not be mistaken for a renaissance. ■

Nuclear non-proliferation

A nuclear test for the Obama doctrine

The promise and dangers of negotiating a deal with Iran's mullahs

BARACK OBAMA came to office with a simple message for his country's foes: "We will extend a hand if you are willing to unclench your fist." He has done a lot of handshaking—with Myanmar and with Cuba (see page 31). Can he now unclench the fist that most threatens the world—that of Iran, which most people believe has for years been trying to develop an atom bomb? The talks with Iran to limit its nuclear programme, in return for a lifting of sanctions, are the most important test of the Obama doctrine that diplomatic engagement, with calculated risks, is better than ostracising enemies.

Only the "parameters" of a nuclear deal were agreed to on April 2nd. Still, it was a potentially ground-breaking moment. If the outline becomes a final agreement, it would offer much greater assurance that Iran will not get the bomb for at least a decade. But two competing dangers loom. On the one hand, Mr Obama's political foes could seek to destroy even a good deal. On the other, his team could yet fail to secure the safeguards that make the difference between a good agreement and a bad one in the weeks of bargaining to finalise an agreement by the deadline at the end of June.

A credible deal might provide balm to a region now ravaged by civil war. With time, dialogue might help America and Iran overcome the rivalry that has poisoned the Middle East since the Islamic revolution of 1979. It might change Iran's disruptive behaviour; or perhaps the regime itself. But nobody should count on that. The nuclear agreement must be judged as an arms-control measure: does it make a nuclear Iran less likely? The answer is a provisional yes, at least for a time. It clearly holds enough promise to justify further talks without Congress imposing new sanctions or impeding the president's right to conduct foreign policy.

A deal would push Iran further from a bomb. The "breakout capability"—the time it needs to make the fissile material for a single device—stood at about two months in 2013, stretched to nearly four months under an interim deal in January 2014 and, under a final accord, would extend to about 12 months, lasting for a decade (a longer duration, say 20 years, would have been better). The inspection system has been tightened and will become much more intrusive. So Iran would find it harder to make a bomb. It would be more likely to be detected if it tried and the world would have more time to respond to violations.

Much work remains before the deal is finalised. The two sides have differences of emphasis and sometimes substance that are unsurprising but nevertheless unsettling. Critical details over the verification and monitoring of Iran's programme and the consequences for any violations (for instance, how ▸▸

sanctions would be reimposed) have yet to be settled. Yet they will determine the credibility of the agreement. There must be tight limits on Iran's research and development. Inspectors must be able to gain access to any sites they deem suspicious. And "snapback" provisions to reimpose sanctions should be credible—not vulnerable to endless negotiations.

Spin and substance

Even if these criteria are met, undeniable dangers will remain. After a decade, when this deal begins to lose force, Iran would have the world's blessing to develop a massive uranium-enrichment programme. It could then produce a bomb's worth of fissile material in a few weeks. As a signatory of the Nuclear Non-Proliferation Treaty, Iran would still be banned from a bomb and would be subject to enhanced monitoring. Even so, should the regime not change in fundamental ways, the world would have to live with mullahs on the nuclear threshold. There is nothing, in theory, to stop America (or Israel) from taking action if they believe Iran is trying to cross that threshold. But if Iran has kept to the deal in the interim, the world may take more persuading to endorse sanctions and air strikes. Paradoxically, the long-term danger may not be so much Iranian rule-breaking as apparently scrupulous compliance.

A deal that ensured "zero enrichment" would have been ideal—but it was unobtainable. In the real world, any accord has to be measured against the plausible alternatives, and they all look worse. Increasing sanctions to compel Iran to submit to tougher terms would require the backing of the UN and the EU, which is unlikely to be forthcoming. A return to confrontation in the name of toughening the deal would probably convince the mullahs that no accommodation with America is possible, just as the West would give up on Iran if it suddenly changed its terms. If negotiations break down, the risk is that Iran will remove the existing constraints on its programme. It might then get a bomb before sanctions threaten the survival of the regime. Military action is even less promising: the best chance of using force to stop Iran passed a long time ago. Bombing Iranian nuclear sites would at best set back the programme by a few years at the cost of driving it underground and of inflaming a violent region.

On balance, a decade's respite is worth taking. In that time much may change for the better. But if Iran remains the same, Mr Obama's accord will not eliminate the threat; it will only bequeath it in a different form to a future president. ■

Britain's taxes

No to non-doms

Labour wants to end a tax break for the rich and mobile. It is the right policy for the wrong reasons

THE question of how a nation should treat foreign residents dates back at least to Plato. In "Laws", the philosopher laid down rules for resident aliens ("he must possess an art; he can prolong his visit no longer than 20 years...he will pay no resident alien tax"). But Britain's approach is the antithesis of lofty philosophy. At its heart is a generous tax exemption for non-domiciled residents, or "non-doms", who need have only tenuous links to another country. The Labour Party, campaigning for a general election on May 7th, has pledged to abolish non-dom status. Its proposal is welcome.

Non-doms can choose whether to pay British taxes on their overseas earnings. If they have lived in Britain for at least seven of the previous nine years, they must pay an annual fee to avoid tax, ranging from £30,000 ($45,000) rising to £90,000, for longer stays. At the last count 47,000 of 111,000 non-doms took advantage of the opt-out, with 5,000 paying fees to the exchequer (see page 53).

The exemption is not needed to avoid double taxation. Instead, its main effect is to provide a "golden hello" for the rich and mobile, who can live in Britain without coughing up much to the exchequer—at least, relative to their means. Those who benefit most channel their overseas income through tax havens, so that it is taxed nowhere.

The greatest anomaly is the archaic definition of domicile. The most famous non-dom is probably Roman Abramovich, a Russian oligarch who owns Chelsea football club. But Britons themselves can become non-doms if they leave the country and choose to return "temporarily". Stuart Gulliver, the British chief executive of HSBC, a bank with its headquarters in London, is a non-dom. Bizarrely, Brits can pass the status down the generations, but only on the father's side (Zac Goldsmith, a Conservative MP, was a hereditary non-dom until 2009).

Labour rightly wants to overhaul this mess. Previous governments have pulled their punches, introducing the fees rather than scrapping the exemption altogether. There is a risk that some non-doms will flee, potentially leaving the exchequer worse off on balance. Each year non-doms contribute about £8.4 billion in income taxes and at least £150m in fees.

But Britain's pull is strong; the attractions of London life, for example, extend beyond the tax system. Other countries do without the exemption. America taxes its residents on their worldwide income and New York has no trouble attracting global elites. A principle is at stake: taxes command consent because they are fair. Non-dom status feeds a corrosive perception among Britons that the mobile rich do not pay their share.

Bash and bodge

The problem is that Labour's policies too often seem less about restoring equitable tax treatment than sowing discord by demonising financial success. The party wants to impose a barrage of taxes on the rich. Its "mansion tax" is based on the kernel of a good idea—property taxes have not kept up with the rampant growth in house prices. But restricting higher property taxes to houses above an arbitrary cut-off of £2m is bad economics. A proposed tax on bankers' bonuses is inferior to the existing bank levy. Raising the top rate of income tax to 50% would hurt incentives to work and yield little revenue. These proposals suggest Labour has lapsed into its old resentment of wealth. That really would drive out the non-doms—and hurt Britain's economy. ■

The goal of female equality

Regarding the United Nations' Sustainable Development Goals, organisations that are working on gender equality and women's empowerment are not lobbying for their own "particular bugbear" in the targets ("Unsustainable goals", March 28th). What we are striving to ensure is that the SDGs fully address the systemic injustices that women experience daily. The earlier Millennium Development Goals fell far short of addressing gender inequalities.

The targets of the proposed SDG to "achieve gender equality and empower all women and girls", although not perfect, are much broader and stronger. They will cover discrimination against women; violence against women and girls; child, early and forced marriage; female genital mutilation; unpaid care and domestic work; women's participation in decision-making; and their sexual and reproductive health and reproductive rights.

Not a single country has achieved gender equality. Thus, women's and other organisations and many governments are standing firm to keep this agenda in the SDGs. This new development agenda is universal; it is to apply to all countries and all people. It is not a bureaucratic process that is "out of control". Women and girls make up more than half the world's population and have a right to this agenda for the achievement of gender equality in the next 15 years. These targets truly aim to "leave no one behind".

MARIANNE HASLEGRAVE
Director
Commonwealth Medical Trust
London

You suggest that the world is likely to fall far short of the ambitious targets that were set in 2000 of reducing child mortality by two-thirds and maternal mortality by three-quarters by 2015. In practice, however, the world will actually come far closer to achieving these goals than sceptics believed when they were adopted.

Many developing countries, including Ethiopia, Tanzania, Malawi, and Bangladesh, have met the child-mortality goal ahead of schedule, and many more are accelerating progress. This only underscores why it is so important that completing the unfinished agenda attached to clear, measurable targets for 2030 needs to be a paramount objective of the new SDGs.

MARK SUZMAN
President, Global Policy and Advocacy
Bill & Melinda Gates Foundation
Seattle

Electing Britain's president

The debate over the use of televised debates in Britain ("Lights, camera, election", March 21st) neglects the fact that they do not suit our parliamentary system. Britain does not have a presidential system. You do not vote for David Cameron or Ed Miliband, unless you happen to live in their constituency. The prime minister is meant to be the first among equals in his cabinet. The TV debates help put over the impression to the electorate that the prime minister has presidential constitutional powers. He does not, even if the increasing media focus on prime ministers will create that power gradually by convention.

MARCUS WETHERED
London

For the past 40 years the question of Britain's relationship with Europe has been the Great Rift Valley running through British politics. As a way of settling this argument David Cameron has proposed a renegotiation of some aspects of Britain's relationship with Europe followed by a referendum in which British voters will decide the issue.

Bagehot (March 28th) paints an alarming picture of the risks involved. But what of the risks of not having a referendum? So far, despite many years of broken promises, the Eurosceptics have kept within the bounds of constitutional opposition. But if there were to be a further postponement of a plebiscite on Europe frustration could boil over with unpredictable results. At the very least the argument would become ever more bitter and corrosive. That would also be very bad for Britain.

Two things are clear. First, that occasionally in a democracy, and despite the fears of the elite of getting a "wrong" result, the people must be allowed to have their say on important matters in order to clear the air. And second, that there is a strong likelihood that British voters will opt to stay as full members of the EU.

If Mr Cameron delivers his referendum and it turns out that way he will have done the country, and Europe, a great service, and gone a very long way towards healing the damaging divisions within the country and his own party.

ROBIN AITKEN
Oxford

The Singaporean model

On Singapore, you followed a well-trodden path of grudgingly conceding the achievements of this former colonial backwater while reasserting the superiority of the Western governance system ("Asia's city-statesman", March 28th). By this narrative, Singapore's success is but an unrepeatable geographic and historical anomaly, likely to implode, and not worth the limitations on civil liberties.

A road less travelled is to apply Lee Kuan Yew's legacy internationally. Societies might yet benefit from near-absent unemployment, robust government finances, affordable quality health care and education opportunities for all.

HENRI GHESQUIERE
Singapore

Cities taking flights

Despite *The Economist*'s clear distaste for aerotropolises, cities with airports at their heart, they can be a valuable asset and Britain needs one now ("Aerotropolitan ambitions", March 14th). The question is where to put it. The Cameron administration proposes to turn Heathrow into an aerotropolis, degrading London with noise pollution and traffic congestion that already is at dangerous levels.

However, it could build an aerotropolis in the vicinity of Birmingham, England's second most populous city, that would be a boon for the British economy. Among other benefits, such an infrastructure improvement would bring an international hub airport within one hour's travel for tens of millions.

ROBERT LESLIE FISHER
Delmar, New York

Nice Bumping into you

With regard to business cards, Schumpeter observed that "Even at the trendiest of Silicon Valley tech gatherings, people still greet each other by handing out little rectangles made from dead trees rather than tapping their phones together" (March 14th). There used to be an app, called Bump, that supported this by allowing people to tap together phones to exchange virtual business cards. It was shut down in 2014. The rectangles made from dead trees remain.

ULYSSES LATEINER
Somerville, Massachusetts

In the late 1970s, business cards were just being reintroduced in China. I received one which stated, in English:

> The responsible person of the department concerned.

KAREL KOVANDA
Brussels ■

Letters are welcome and should be addressed to the Editor at
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More letters are available at:
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United Nations
careers

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All applications should include a curriculum vitae and be sent to the Secretariat or emailed to UNDSSJobs@un.org by 25 May 2015.

Applications from women are strongly encouraged.

For more information about this position, go to:
www.un.org/sg/vacancies

aemera.org

Chief Executive Officer (CEO)

As the first of its kind in Canada, the Alberta Environmental Monitoring, Evaluation and Reporting Agency (AEMERA) is an arm's-length organization established to operate a scientifically-driven program responsible for measuring, assessing and informing the public on key ambient air, water, land and biodiversity indicators.

AEMERA is seeking candidates for the role of Chief Executive Officer (CEO). Based in Edmonton, Alberta, Canada, the CEO will provide a unique opportunity for a visionary leader to work with the Board of Directors and a Leadership team to build a fully operational organization. The CEO will lead the day-to-day operations to ensure AEMERA achieves its strategic goals at the highest operational standards. This individual will play a vital role in positioning AEMERA as a trusted and globally recognized source of credible, accessible, scientifically sound environmental data and information on the condition of the environment in Alberta.

The ideal candidate is a proven leader with at least ten years of executive experience who can build the strategy and organizational capacity to effectively spur innovation and deliver results in a complex province- wide organization. The CEO will be a highly effective communicator and collaborator who understands governance and working with a board of directors; how to meaningfully engage with multiple stakeholders including industry and Aboriginal communities; and the value of scientific rigour along with traditional ecological knowledge. A post–secondary degree is required, and a professional designation and/or a graduate degree would be an asset. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

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You may not have heard of us but Crisis Action is an award-winning organisation at the forefront of global advocacy.

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Founded in 2004, we now have staff in Beirut, Brussels, Johannesburg, London, Nairobi, New Delhi, New York, Paris and Washington DC. As Executive Director you will provide strategic leadership across the organisation, develop high-profile international campaigns and manage an exceptional, high performing international team. You must have a first-rate and global analysis of foreign policy, high-level experience of affecting change and world class management skills.

You will join Crisis Action in excellent shape and have the necessary vision, talent and experience to chart an inspiring and effective course into our second decade to ensure civilians around the world are better protected in times of conflict.

Please go to **www.crisisaction.org/opportunities** for an application pack. Deadline for applications is: 00:01 GMT Monday 11th May 2015.

DIRECTOR

INDIAN INSTITUTE OF MANAGEMENT (IIM) ROHTAK, INDIA

IIM Rohtak was established in 2009 in the NCR region of Haryana. The vision of the Institute is to be a globally recognised institution for educating leaders who will contribute to the social, economic and cultural development of communities. As part of its leadership journey the Institute focuses on:

- Programme offerings based on rigorous research and embedded in societal / developmental issues and industry context and practices
- Encouraging free exchange of ideas and proven knowledge as a leading member in a network of national and international institutions
- Creating an open environment, objective institutional mechanisms, modern pedagogical methods thereby encouraging honest intellectual thinking and debates and promote thought leadership amongst faculty and students
- Transparency and fairness as the guiding values in the conduct of its affairs

IIM Rohtak is looking for a Director who will also be the Chief Executive of the Institute.

The Director provides academic leadership and administration to the Institute under the overall guidance of a highly distinguished Board of Governors. He is also guided by an International Advisory Council comprising of world-class academic and business professionals.

Applications are invited from distinguished professionals and academic administrators having at least 15 years teaching/research experience in reputed institutions, experience in institution-building and who are passionate about building a premier institution that reflects the talent, energy and potential of an emergent India.

The applicants should have outstanding academic credentials throughout, including a Ph.D Degree from a reputed institution with First Class degree at Bachelor's and Master's level.

The position is based at Rohtak (Haryana) within the National Capital Region, approximately a two-hour drive from New Delhi.

The Director will be appointed after obtaining approval of the Appointments Committee of Cabinet (ACC) based on the recommendations made by a Search-cum-Selection Committee (SCSC). The SCSC will consider applications fulfilling the above criteria received in response to this advertisement as well as nomination received from eminent persons in the field of management/management education.

Selected candidates shall have a contractual tenure of appointment for five years or until attaining the age of superannuation of 65 years, whichever is earlier.

Qualified and interested applicants should send their applications with detailed information on the seven parameters mentioned in Application (Annexure-1) of the notification available on the Institute's website **www.iimrohtak.ac.in** to Mr. Shailendra Kumar, Director (Management), Room No. 220, C-Wing, Department of Higher Education, MHRD, Shashtri Bhavan, New Delhi – 110001, India and e-mail to shail.ca09@gmail.com

The applicants should arrange to send the Vigilance Clearance/Background Clearance directly from their present organisation to the address mentioned above.

Last date to submit the application: May 15, 2015

Crown Agents
Chief Executive Officer

Crown Agents Ltd is an international development company headquartered in the United Kingdom. Its main focus is to help governments around the world to increase prosperity, reduce poverty and improve health by providing consultancy, supply chain services, financial services and training.

The CEO, reporting to the Chairman, will be responsible for policy development, strategy and implementation as well as leading Crown Agents both in the UK and internationally. This is a high profile appointment requiring the ability to interface with a broad range of stakeholders including national governments and international development/aid bodies.

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A competitive package will be offered to reflect the importance and challenge of the position.

CROWN AGENTS

Please apply by submitting your CV and application letter to:
Caroline Wright, Hanson Green,
Amadeus House, 27b Floral Street
London WC2E 9DP
Tel. +44 (0)20 7253 7940
Email: **cwright@hansongreen.co.uk**

The closing date of the vacancy is:
Friday 17 April 2015

WORLD BANK GROUP

Vice President, Treasurer

The World Bank has commenced a global search for its next Vice President and Treasurer.

Reporting to the Managing Director and World Bank Group Chief Financial Officer, Treasury has deep experience in contributing to the World Bank's capacity to fulfill its twin goals of ending extreme poverty and promoting shared prosperity by raising finance in the international capital markets, managing its investments, investing its reserves, managing the pension funds and providing technical assistance and advisory services.

The Treasurer will lead an international staff covering business areas including asset management and advisory, bond and investment products, financing and risk management, debt management and financial advisory and pension and endowments.

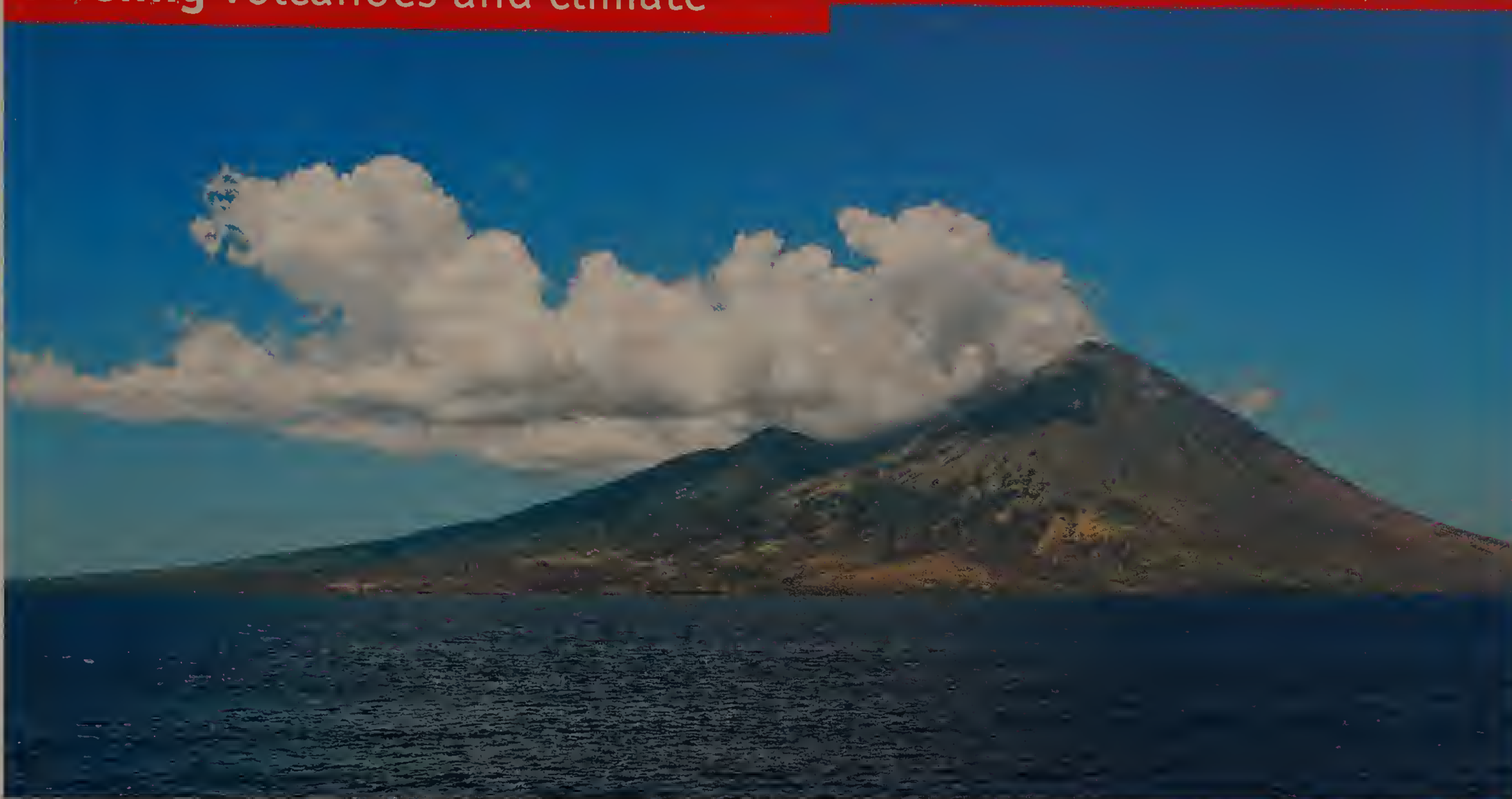
The successful candidate will be responsible for managing this substantial advisory, transaction and asset management operation, maintaining the World Bank's high standing in the financial markets. The successful candidate will also collaborate extensively with other finance businesses throughout the World Bank Group as well as with the other institutions comprising the World Bank Group. The position is based in Washington, D.C.

A full position description will be sent upon receipt of nominations or expressions of interest to **WBTreasurer@RussellReynolds.com**

Deadline April 17, 2015.

The World Bank Group is committed to achieving diversity in terms of gender, nationality, culture and educational background. Individuals with disabilities are equally encouraged to apply.

Working for a World Free of Poverty



After Tambora

Two hundred years ago the most powerful eruption in modern history made itself felt around the world. It could happen again at almost any time

IF ALIENS had been watching the Earth during 1815 the chances are they would not have noticed the cannon fire of Waterloo, let alone the final decisions of the Congress of Vienna or the birth of Otto von Bismark. Such things loom larger in history books than they do in astronomical observations. What they might have noticed instead was that, as the year went on, the planet in their telescopes began to reflect a little more sunlight. And if their eyes or instruments had been sensitive to the infrared, as well as to visible light, the curious aliens would have noticed that as the planet brightened, its surface cooled.

Mount Tambora (pictured), a volcano on the Indonesian island of Sumbawa, was once similar in stature to Mont Blanc or Mount Rainier. But in April 1815 it blew its top off in spectacular fashion. On the 10th and 11th it sent molten rock more than 40 kilometres into the sky in the most powerful eruption of the past 500 years. The umbrella of ash spread out over a million square kilometres; in its shadow day was as night. Billions of tonnes of dust, gas, rock and ash scoured the mountain's flanks in pyroclastic flows, hitting the surrounding sea hard enough to set off deadly tsunamis; the wave that hit eastern Java, 500km away, two hours later was still two metres high when it did so. The dying mountain's roar was heard 2,000km away. Ships saw floating islands of pumice in the surrounding seas for years.

In his book "Eruptions that Shook the World", Clive Oppenheimer, a volcanologist at Cambridge University, puts the number killed by the ash flows, the tsunamis and the starvation that followed them in Indonesia at 60,000-120,000. That alone would make Tambora's eruption the deadliest on record. But the eruption did not restrict its impact to the areas pummelled by waves and smothered by ash.

When the sulphur hits the stratosphere

The year after the eruption clothes froze to washing lines in the New England summer and glaciers surged down Alpine valleys at an alarming rate. Countless thousands starved in China's Yunnan province and typhus spread across Europe. Grain was in such short supply in Britain that the Corn Laws were suspended and a poetic coterie succumbing to cabin fever on the shores of Lake Geneva dreamed up nightmares that would haunt the imagination for centuries to come. And no one knew that the common cause of all these things was a ruined mountain in a far-off sea.

While lesser eruptions since then have had measurable effects on the climate across the planet, none has been large enough to disrupt lives to anything like the same worldwide extent. It may be that no eruption ever does so again. But if that turns out to be the case, it will be because the human world has changed, not because volcanoes have. The future will undoubtedly see eruptions as large as Tambora, and a good bit larger still.

Mixed in with the 30 cubic kilometres or more of rock spewed out from Tambora's crater were more than 50m tonnes of sulphur dioxide, a large fraction of which rose up with the ash cloud into the stratosphere. While most of the ash fell back quite quickly, the sulphur dioxide stayed up and spread both around the equator and towards the poles. Over the following months it oxidised to form sulphate ions, which developed into tiny particles that reflected away some of the light coming from the sun. Because less sunlight was reaching the surface, the Earth began to cool down.

The sulphate particles were small enough to stay aloft for many months, so the cooling continued into the following year. By the summer of 1816 the world was on average about 1°C cooler than it had been the year before—an average which hides much larger regional effects. Because the continents are quicker to cool than the heat-storing seas are, land temperatures dropped almost twice as much as the global average.

This cooling dried the planet out. A cooler surface meant less evaporation, which meant less water vapour in the lower atmosphere and thus less rain. Rainfall over the planet as a whole was down by between 3.6% and 4% in 1816.

If such numbers seem suspiciously accurate, considering that most of the world of 1816 was devoid of thermometers and rain gauges, it is because they come from recent computer modelling of the climate ▸▸

that seeks to mimic the conditions Tambora created. Like all modelling results, such numbers need caveats. These results, though, and similar ones from other models, can be accorded the credence that comes from having been proved right in similar situations.

The 1991 eruption of Mount Pinatubo in the Philippines was about a sixth as large as Tambora's in terms of the volume of lava, rock and ash, and about a third as large in terms of sulphur emissions. Satellites showed that in the summer of 1992 the sulphur it had spewed into the atmosphere was reducing the amount of sunlight getting to the Earth's surface by well over three watts per square metre; for comparison, the warming effect of the 40% increase in the atmosphere's carbon-dioxide level since the age of Tambora is just two watts per square metre.

With the energy absorbed by the Earth reduced, temperatures fell by around half a degree in the year after Pinatubo; rainfall dropped off significantly, too. Computer models run after the eruption but before these effects became visible captured the effects reasonably accurately (though they had a tendency to overestimate the cooling). This is one of the best reasons for thinking that such models capture the workings of the climate quite well.

The historical record largely bears out what the models suggest Tambora did. Across Europe the summer of 1816 was cold and wet, and the harvest terrible. The effects were most notable around the Alps; in Saint Gallen, in Switzerland, the price of grain more than quadrupled between 1815 and 1817. Starving migrants took to the roads in their hundreds of thousands; mortality rates climbed due to starvation and disease. Death also stalked Yunnan, where Tambora's cooling shut down the monsoon and cold days in summer killed the rice harvest for three years running.

Monsoons, which are driven by the difference in temperature between hot land and cooler sea, are particularly vulnerable to the excessive cooling of the land that volcanoes bring. Their weakening can have effects on more than crops. In his excellent account of the global impacts of the 1815 eruption, "Tambora", Gillen D'Arcy Wood of the University of Illinois draws on the writings of James Jameson, a doctor in Calcutta, who held the lack of fresh water which followed the failure of the 1816 monsoon responsible for the cholera epidemic that swept through Bengal the following year.

Was this all down to one volcano? Not entirely; nothing in the climate has a single cause. The global climate shifts in various ways on a number of timescales, and its particular disposition at the time a volcano strikes will influence the way the volcano's effects play out. The fact that an El Niño event—a swing in the global climate driven by the slopping of warm water east across the Pacific towards South America—was getting under way at the time of the Pinatubo eruption in 1991 undoubtedly modulated its climatic effects.

Alan Robock, an expert on links between volcanoes and climate at Rutgers University, notes a particularly intriguing initial condition that could have influenced the world's response to Tambora. There had been another large eruption—larger than Pinatubo—just six years before. No one knows where this 1809 eruption was, but its signature can clearly be seen in the Greenland and Antarctic ice sheets. The sulphur put into the stratosphere by volcanoes shows up quite clearly in the year-by-year records of what was going on in the atmosphere that climate scientists extract from polar ice cores. These records make it possible to give dates to large eruptions in the past even if no one recorded the event at the time (see chart).

Cooling Mr Knightley

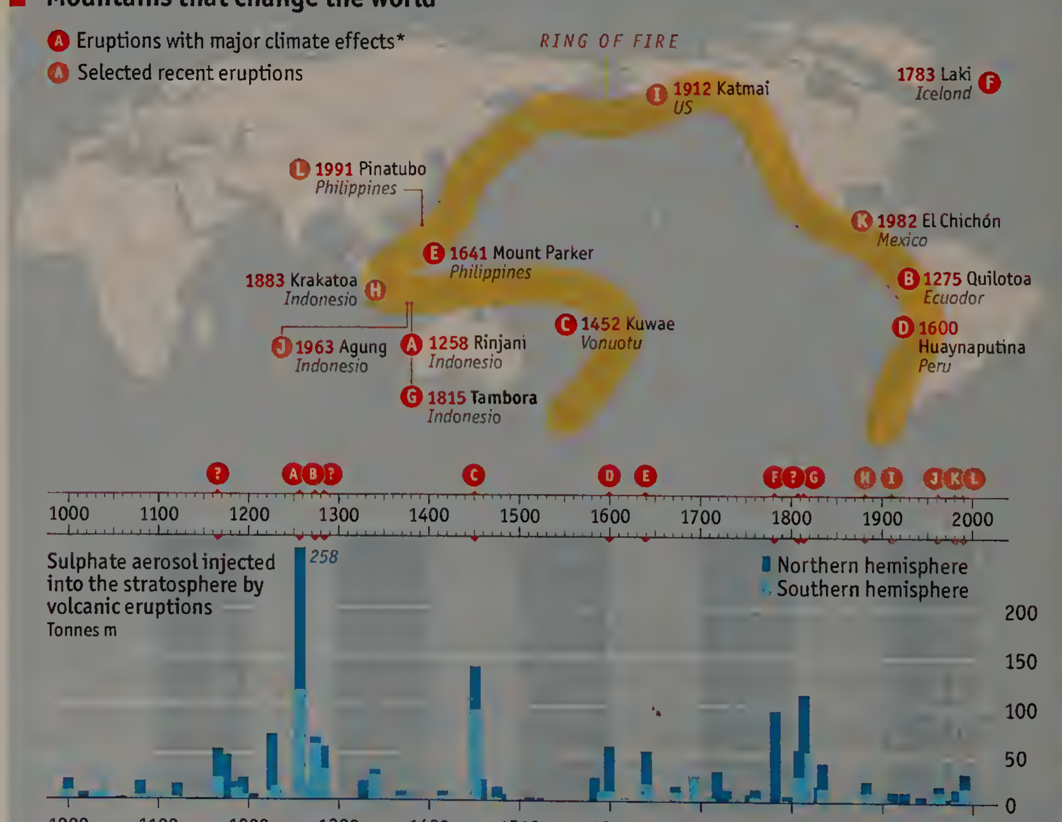
The ice cores show that the 1809 eruption was easily large enough to have had effects on the climate, and there is some evidence of cooling in subsequent years. In Jane Austen's "Emma", which according to Euan Nisbet, a geologist at Royal Holloway, London, seems to follow the weather of 1814, spring is remarkably late, with apple trees blossoming in the middle of June. Precooling along these lines might have made some of the subsequent effects of Tambora more marked, while possibly lessening others. Some researchers believe that a number of eruptions close together might be able to trigger a climate downturn that lasts considerably longer than the few years models normally predict; a set of eruptions in the late 13th century, this idea suggests, may have been part of the reason for the subsequent global cooling known as the "little ice age".

If the prior state of the climate system constrains an eruption's effects, so does that of the human world. The damage done to Europe by the preceding quarter-century of revolutionary and Napoleonic war could have left it particularly vulnerable to 1816's "year without a summer". The situation in Yunnan would hardly have been as dire had the population not been hugely expanded by the Qing dynasty's encouragement of new settlers.

Similarly uncaptured in models, but even more fascinating to speculate about, are the after-effects of the Tambora downturn. In America, the spike in grain prices caused by Europe's hunger drove a wave of farmers across the Appalachians to where the Ohio Valley was enjoying far more clement weather, with barges taking exports for Europe down the Mississippi in ever larger amounts. The collapse in the grain price when Europe's harvest recovered contributed to the American economy's first major depression.

The historian John Post, in a study of Tambora's effects published in 1977, "The Last Great Subsistence Crisis in the Western World", held that the volcano reshaped European politics. The disorder that sprang up in the bad weather from 1816 to 1818, and its subsequent repression, created a climate for authoritarian rule that ▸▸

Mountains that change the world



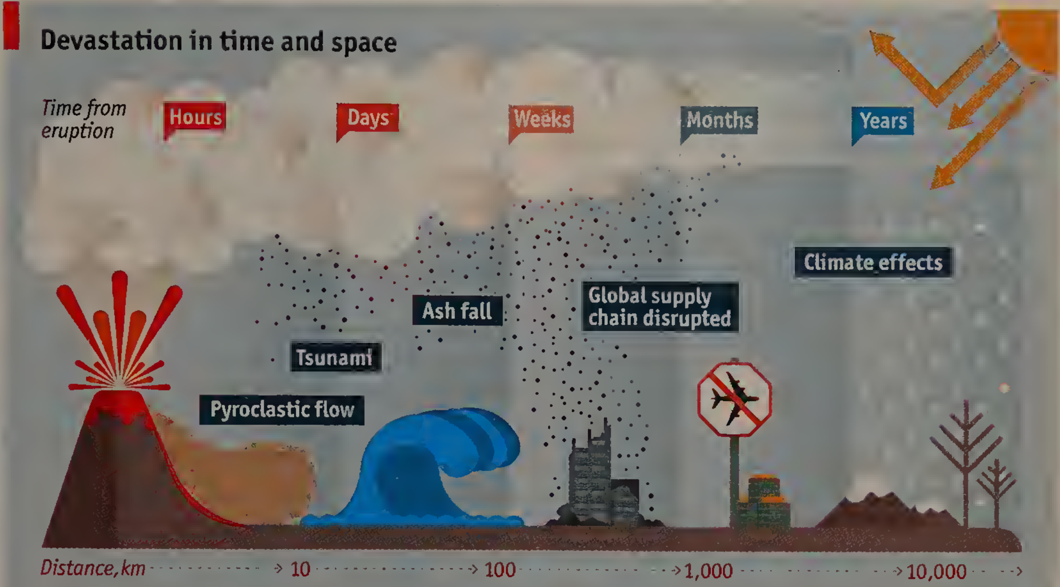
Sources: Rutgers University; Global Volcanism Program, Smithsonian Institution

*Sulphur emissions >50m tonnes

held sway until the middle of the century. Mr D'Arcy Wood points out that it was in the aftermath of the Tambora famines that farmers in Yunnan started to plant opium poppies, the value of which as a cash crop offered some insurance against future failures of the grain harvest.

On top of such structural shifts, there are the personal stories. If Shelley, Byron and their romantic entourage had not been cooped up in a Swiss villa by incessant rain, would they have amused themselves by writing horror stories for each other—including John Polidori's "The Vampyre", the first novel to deal with seductive blood-sucking aristocrats, and Mary Shelley's "Frankenstein", which has shaped fears of scientific innovation from that day to this? If the summer frosts of "Eighteen-hundred-and-froze-to-death" had not driven Joseph Smith, a farmer, from Norwich, Vermont to Palmyra, New York, a place of vigorous religious enthusiasms, would his son Joseph junior still have been able to find the golden tablets to which the angel Moroni led him a few years later, or would the history of Mormonism have been very different?

Devastation in time and space



Source: *The Economist*

Reappraising the risks

And what if this happened again? In general, volcanoes are not something people around the planet worry about very much. In lists of the 40 most expensive and most lethal natural disasters since 1970 recently produced by Swiss Re, a reinsurer, no eruptions feature at all. Models of the economic losses that large eruptions could cause are nothing like as well developed as those that the insurance industry uses for storms, floods or earthquakes, because such losses have mattered little. Some reinsurers, though, are beginning to put that right.

One worry is that even quite a small eruption could cost a lot if it hit a built-up part of a developed country. A study by Willis Re suggests that an eruption of Italy's Vesuvius like the one which took place in 1631 (a much smaller event than that which destroyed Pompeii) could lead to an economic loss of well over €20 billion ($22 billion). Most of the property damage would be down to buildings collapsing under the weight of the ash that falls on them. The 1707 eruption of Mount Fuji produced only 2% as much ash as Tambora did, but Christina Magill of Macquarie University has calculated that if both eruptions were rerun today the urban area affected by heavy ashfall would be greater in the case of the Fuji eruption, since a great deal of that ash fell on what is now Tokyo.

The other reason for thinking more seriously about the damage done by volcanoes than recent history might seem to merit is that geology shows that they need to be assessed on much longer timescales. Today's earthquakes, storms and floods—which make up the bulk of the natural disasters that insurers worry about—are doing more damage than yesterday's did, but that is because they hit a world in which there is more valuable property that is likely to be insured, not because the disasters themselves are getting worse. The world's worst storm or earthquake over a millennium is not all that much worse than the worst of a century. With volcanoes things get worse and worse the deeper in time you look.

In terms of direct effects, this is still not particularly worrying for most of the world's population. Seven out of eight people on the planet live more than 100km from any potential eruptions. The "Global assessment report" (GAR) prepared for the UN summit on disaster-risk reduction held in Sendai, Japan, in March found that 95% of those at risk live in just seven countries. Five—Indonesia, the Philippines, Japan, Mexico and Guatemala—are on the circum-Pacific "ring of fire", where clashing tectonic plates promote volcanism as well as earthquakes; the other two are Ethiopia and Italy. Two-thirds of the exposed population is in Indonesia.

The good news for the people who are at risk is that volcanoes—unlike earthquakes—provide a fair amount of warning before doing their thing. Scientists are increasingly good at looking out for such warnings, and most volcanoes that are close to lots of people are now pretty carefully monitored, though there are exceptions—the GAR points to the Michoacan-Guanajuato cinder-cone field in Mexico as a worrying one. Satellites and seismology are likely to pick up some signs of imminent eruptions from almost all the others. When the warnings seem to merit it, action can be taken. During the 2010 eruptions of Mount Merapi in Indonesia, the largest so far this century, 350,000 people were evacuated; as a result the death toll was only a few hundred. Evacuations kept the casualties at Pinatubo similarly small.

Unfortunately, predicting really large eruptions may be harder than predicting smaller ones like Merapi's. Before a very large eruption you can expect a volcano to have been dormant for centuries; it takes time for the infernal forces to build up. But that does not mean that the first eruption of any long-dormant volcano will be catastrophic. It might have decades of throat-clearing to go through before it really lets rip. It might go back to sleep.

It was with this in mind that geologists embarked on a project to try to understand long-dormant Pinatubo's history soon after it started to show signs of life in 1990. They found that the volcano seemed not to be the throat-clearing type, specialising instead in dramatic eruptions. Stephen Sparks of Bristol University says that understanding did a lot to make people feel justified in calling for a big evacuation.

Wherever the next big eruption happens, though, and whether predicted or not, it will, like Tambora, have global effects—and this time there will be a greater range of them. The climate is not the only global system now open to interruption.

All disasters now reverberate more than they would once have done. Disrupted supply chains transmitted the losses from the Japanese earthquake and tsunami in 2011 far and wide; tourism meant many more Swedes died in the Indian Ocean tsunami of 2003 than in any recent disaster on their home soil. Volcanoes, though, have the added ability to interfere with one of the ways in which such connections between far-off places are supported. As Eyjafjallajokull in Iceland showed five years ago, a quite small eruption's ash cloud can have a big impact on air traffic if it is in an inconvenient place.

A really big eruption would shut down large swathes of airspace for a couple of weeks. If the airspace in question were hard to reroute around, that would have both direct impacts on the aviation industry—Eyjafjallajokull cost it about $1.7 billion—and indirect impacts on its users—valued at about twice the direct effects in that

case. The losses would not be evenly spread or easily predictable. The Kenyan women who provide most of the labour for the country's cut-flower industry suffered disproportionately when Eyjafjallajokull kept their blooms from market.

Another problem not seen when Tambora erupted would be damage to the ozone layer. The reactions by which chlorine destroys ozone are encouraged by the sulphate particles produced by volcanoes. In the 19th century that didn't matter; there wasn't any chlorine in the stratosphere. Now, thanks to human intervention, there is. Pinatubo saw global reductions in stratospheric ozone levels and a marked deepening of the "ozone hole" over Antarctica. If a Tambora-scale eruption were to happen in the near future it would have even stronger effects.

Warmer house on the prairie

And then there is the climate. If, like Tambora and Pinatubo, the volcano in question is close to the equator, Mr Robock says models predict an average cooling of perhaps 2°C in the summer of the next year over much of North America, Europe, Asia and Africa, and decreased precipitation over the Amazon, southern Africa, India, South-East Asia and China. The models also make predictions about the weather in the intervening winter: the particles that cool the surface warm the stratosphere, which sets up a strong Arctic jet stream in a particular configuration. Expect a peculiarly warm winter in America's prairies, western Europe and Central Asia, and a very cold one in eastern Canada, the Middle East and southern China.

What these shifts would mean for agriculture is hard to say. The experience of Tambora suggests gloom, but this is not that world. For one thing, there is more agricultural land in more places. That gives more scope for bad harvests in some regions being offset by better ones elsewhere. Both models and studies of the years after Pinatubo suggest that, for various reasons, the world's plant life as a whole gets more productive in the cooler, drier years that follow eruptions. It is also possible that some parts of a world stressed by global warming might experience sudden cooling as less of a problem than it was after Tambora—though the dryness might exacerbate their challenges.

Another reason for tempered optimism is that the world would know what was coming. Mr Robock and his colleagues would be spreading the word before the eruption was over. Futures markets would doubtless pay attention. So, one would hope, would governments.

The Red Cross/Red Crescent Climate Centre is dedicated both to providing warnings about the human impacts of climate shifts and extreme weather and to acting as an advocate for the people who suffer from them most. It spends a lot of time looking at how to get timely warnings of the likely regional effects of El Niño events to the countries and people they are most likely to harm, along with advice on how to limit the damage. Its head, Maarten van Alst, says he thinks that the climate impacts of a contemporary Tambora might be comparable to those of the big El Niño of 1997-98, which have been estimated at $36 billion, with 130m lives affected and 21,000 lives lost. And as with El Niños, forewarned would be forearmed. Mr van Alst and his colleague, Pablo Suarez, are trying to get a programme started that would study what actions should be given priority in that lull between the eruption and the cooling that would follow.

Such vigilance could come into its own well before there is another Tambora, since there is a way for considerably smaller eruptions to have climatic effects. Eruptions that take place well away from the equator cool only their own hemisphere, and these lopsided coolings have an impact on the intertropical convergence zone (ITCZ), a belt of rain around the equator. When the northern hemisphere cools the ITCZ shifts south, and that causes droughts in Africa's Sahel. Of the Sahel's four worst years of drought during the 20th century, three took place after northern-hemisphere eruptions: in the year after the Katmai eruption in Alaska, (1913) and the years of and after the El Chichón eruption in Mexico (1982 and 1983).

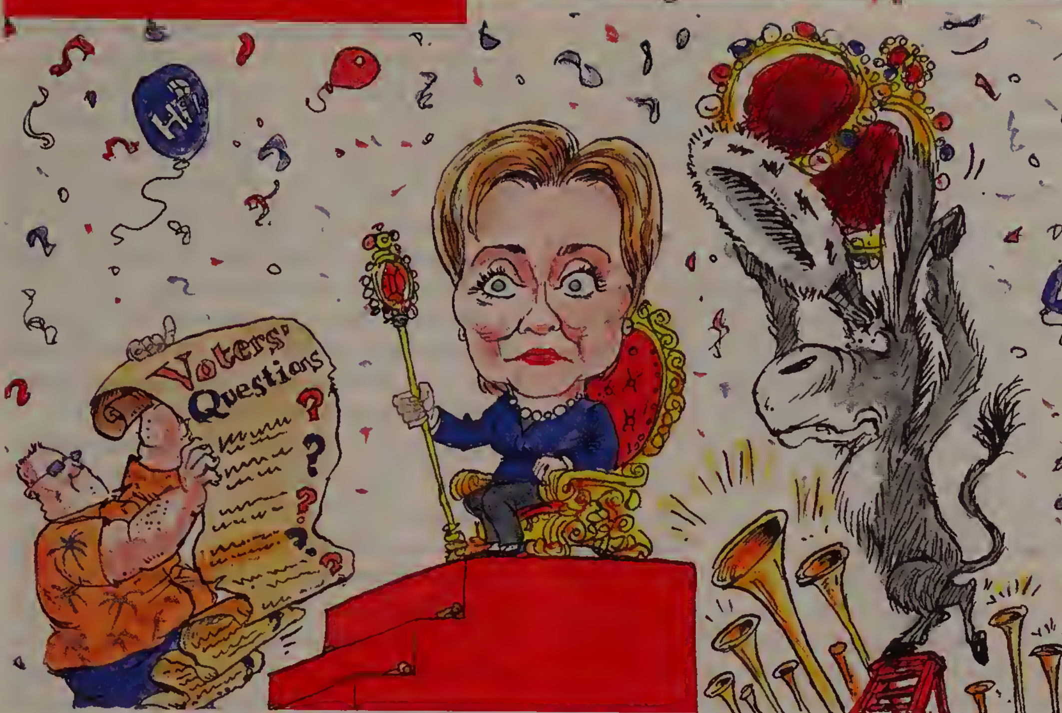
A repeat of the Tambora-sized blast at Taupo in New Zealand that took place 1,800 years ago, on the other hand, would push the ITCZ to the north and bring plentiful rain to the Sahel. The Amazon, though, which depends on the ITCZ staying put, would have a dry few years.

For a smallish volcano at high latitudes the effects on the ITCZ would probably swamp the local and regional effects. The direct damage a full-on Tambora would wreak in a populated region would be far greater, and its hard-to-foresee effects further afield, like those Eyjafjallajokull had on Kenya, might conceivably reinforce each other in calamitous ways, multiplying the economic damage. Still, in most cases it seems likely that here, too, the climate effects would trump the rest.

But that does not mean their impacts would be as dire as those felt two centuries ago. As well as having a wider agricultural base and more foresight, the world today is more developed and better governed. A lot of the damage done in famines such as those of the 1810s comes from agricultural workers losing income at a time of price rises and governments doing nothing about it. Today the proportion of the population working the land is in most places much lower than it was then, and most governments both perceive a need to act during famines and have the capabilities to do so. There might well be a need for humanitarian interventions in the weird-climate years that followed; but such interventions do now happen.

That said, there is no reason to limit concern to Tambora-sized eruptions. There are much larger ones on offer. Some 26,500 years ago the Taupo volcano in New Zealand erupted with well over ten times the power it mustered 1,800 years ago. The odds of a really big eruption in any given year are tiny. Over a century, though, they mount up to maybe a few percent. So, though few of those alive today would perish in a rerun of Tambora, the chances of something much worse over their lifetimes cannot be ruled out. And though forewarning would help, there is no way of forestalling. Humans have huge powers over the planet. But they cannot stop a volcano whose time has come. ■

Pinatubo—picayune by comparison



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Hillary Clinton in 2016

A contest, or a coronation?

PORTSMOUTH

She has no serious rivals yet for the Democratic nomination. But voters still have plenty of doubts about Hillary Clinton

FOR five seconds Hillary Clinton's voice cracked and her eyes grew damp. It was in January 2008 in a coffee shop in Portsmouth, New Hampshire. A sympathetic voter had just asked her how she coped with the hardships of running for president. "How do you do it?" asked Marianne Pernold Young, a local portrait photographer, mentioning that Mrs Clinton's hair always looked perfectly coiffed. "How do you keep upbeat and so wonderful?"

Pundits rushed to analyse the moment. Mrs Clinton was exhausted, they intoned. The former First-Lady-turned-senator knew that her younger rival, Barack Obama, was walking away with a race for the Democratic nomination that had once seemed hers to lose.

As the media juggernaut gathered speed, the strange intensity of America's relationship with Mrs Clinton was laid bare. Supporters hailed the fleeting display of emotion as proof of their heroine's humanity, often hidden by her discipline and caution on the campaign trail. Opponents recalled Edmund Muskie, a Democrat whose presidential bid was derailed in 1972 when he teared up in the face of harsh press attacks, and wondered if the 2008 primary was now over. Back inside the Café Espresso, suspicious journalists surrounded Mrs Pernold Young. Betraying the toxic state of Mrs Clinton's relations with the press pack, many asked if she was a planted campaign stooge.

The candidate herself cornered a press aide and fretted that voters might think her weak, and not ready to be commander-in-chief. Mr Obama took a different view. Watching footage of his rival as he trundled across New Hampshire in a campaign bus, he thought it a worryingly touching moment. "I don't like this. I actually think this could really help her," David Axelrod, the political guru at Mr Obama's side, later recalled muttering.

Seven years on, as America waits to see how Mrs Clinton will conduct a second bid for her party's presidential nomination, that flash of vulnerability is still cited in New Hampshire, the state that next January will host the first primary elections (and the second vote, after the Iowa caucuses) of the 2016 presidential cycle. This time it inspires a consensus: Mrs Clinton needs more such moments.

New Hampshire voters expect to meet candidates in diners and veterans' halls, and to hear them speak in a neighbour's sitting-room. They have a record of dethroning front-runners who take the state for granted. Mrs Pernold Young still lives in Portsmouth, and jokes that "The woman who made Hillary Clinton cry" will be carved on her tombstone. Over breakfast at the Café Espresso, she says she will back Mrs Clinton this time round, after supporting Mr Obama in the 2008 primary. Appalled by the "quagmire" in Washington, and disappointed by how long it took Mr Obama to learn the ways of government, she likes the idea of electing a worldly insider like Mrs Clinton, sighing: "I don't want another trainee." But she does not want a coronation either. She notes that some friends roll their eyes at another Clinton presidency, especially as no serious Democratic rival has yet emerged. "I'd like to see Hillary be challenged," she says.

Such views are widespread, and have been heard within the Clinton camp. Two close advisers, Robby Mook and Marlon

Hillary's homilies

On diplomacy:
"The threat of force can often create conditions to resolve matters."

On governing:
"Don't vote for anybody of any party anywhere in the country who proudly tells you they will never compromise."

On the Monica Lewinsky scandal:
"this vast right-wing conspiracy ...has been conspiring against my husband since the day he announced for president."

Replying to Republicans grilling her about the murder of American diplomats in Benghazi:
"At this point, what difference does it make?"

On grudges:
"In the Bible it says they asked Jesus how many times you should forgive, and he said 70 times 7. Well, I want you all to know that I'm keeping a chart."

Conceding to Barack Obama, 2008:
"Although we weren't able to shatter that highest, hardest glass ceiling this time... it's got about 18 million cracks in it."

A big advantage over Jeb Bush:
"If I want to knock a story off the front page, I just change my hairstyle."

On the real problem facing her compatriots:
"I think we have a fun deficit in America."

Sources: Hillary Clinton; *The Economist*

Marshall, visited New Hampshire and Iowa just before Easter, meeting local Democratic power-brokers. One of these was James Demers, a strategist and lobbyist who was one of Mr Obama's first big backers in New Hampshire. The message from Mrs Clinton's inner circle was that the former secretary of state will run as though she faces a bitterly contested primary, Mr Demers says. She will use the race to explain to America why she wants the presidency, while building the sort of campaign machinery that propelled Mr Obama to the White House in 2008. Whether her primary involves one, two or ten candidates, Mrs Clinton "knows that she has to earn every vote".

As one of the most famous people in the world, constantly watched by the Secret Service, it will be hard for Mrs Clinton to campaign in the traditional New Hampshire way, says Terry Shumaker, a lawyer who co-chaired both of Bill Clinton's campaigns in the state. But he thinks she must try, using the "intimacy" of the state to communicate with the whole country. He describes his old friend as an economic centrist, who sees government as a positive force but believes that business is the engine of the economy. In 2016 she can add domestic and global experience to the mix. "There is a huge hunger for Washington to work again," he says. And with Islamic State fanatics on the prowl, voters have a "visceral" need to feel safe.

Not all Democrats are convinced. Martha Fuller Clark, a state senator and big Obama backer in 2008, notes that New Hampshire Democrats are not "100% for Hillary". She herself remains uncommitted, noting that a potential rival, the former governor of Maryland, Martin O'Malley, has been active in the state. In her telling, New Hampshire Democrats want a candidate who will fight against inequality and for the middle class. They worry about climate change, and are unhappy that so much outside money is flowing into their state, notably since the Supreme Court eased the rules on political spending. They want to hear from Mrs Clinton how to "move from a plutocracy back to a democracy", says Mrs Fuller Clark.

Sisters are doin' it for themselves

That echoes complaints from other Democrats, such as Gary Hart, a former presidential contender, who recently said it should "frighten every American" that the Clinton machine reportedly intends to raise $1 billion. Once the real campaigning starts, the former secretary of state needs a strategy to engage and excite the broader electorate, especially the young, Mrs Fuller Clark adds: not least because she thinks that female politicians are judged more harshly than men, which makes it hard to be accessible. "Women really want to do a good job, something that constrains them from engaging more freely with voters."

After years worrying about the Middle East and Russia, Mrs Clinton will be grilled about health care, or the lack of full-day kindergartens in half the towns in New Hampshire, predicts Colin Van Ostern, a member of the state's Executive Council. He thinks this will do Candidate Clinton much good: "What Hillary Clinton needs is exactly what New Hampshire demands."

The challenges of a fresh Clinton candidacy were summed up by Bill Clinton, the man with the potential to be the campaign's greatest asset and worst liability. No living ex-president enjoys higher approval ratings, as Americans forget the scandals of the 1990s and remember the economic growth, balanced budgets and bipartisan reforms of the welfare system that were achieved on Mr Clinton's watch. Yet in 2008 an ill-disciplined Mr Clinton caused chaos in his wife's campaign.

The former president recently told *Town & Country* magazine that he was not sure he was any good at campaigning any more because "I'm not mad at anybody," citing the mellowing effects of being a grandfather. Despite that disclaimer, Mr Clinton could not resist analysing his wife's putative campaign in some detail, noting that it is hard for any party to hold the White House for longer than two terms, and arguing that should his wife run, she should "go out there as if she's never run for anything before and establish her connection with the voters."

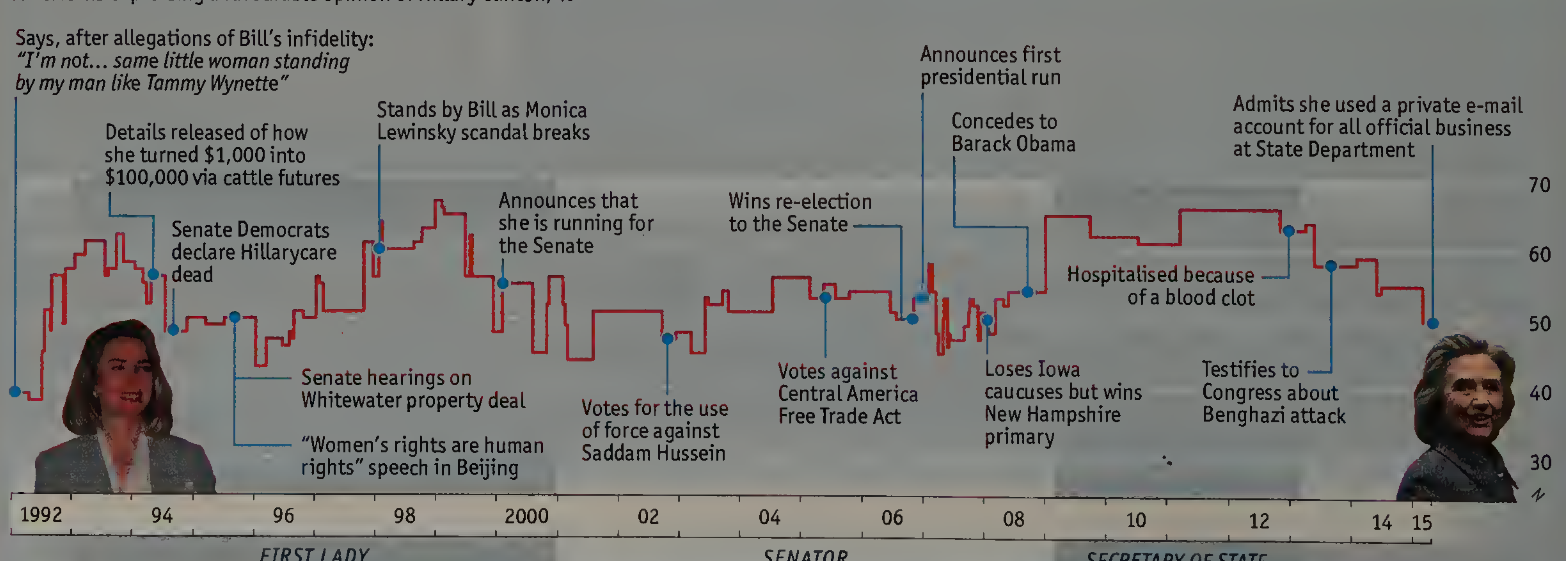
The problem is that the Clintons have run for many things before. Mrs Clinton first entered the governor's mansion in Arkansas in 1979, and has been in the public eye ever since. This makes connecting with ordinary folk a challenge. In a speech last year to a convention of car dealers, she confided that: "The last time I actually drove a car myself was 1996." The fact that she typically received six-figure sums for such speeches does not help either.

Republicans may be expected to paint her as part liberal-elitist, and part big-government statist. Playing on lingering public disapproval of the Obamacare health reforms, Republicans may try to revive memories of Mrs Clinton's failed attempts at expanding health coverage during her husband's presidency.

Republicans will also try to use her record as secretary of state from 2009-13 against her. It is common to hear them talk of a world made more dangerous by a naive, feckless "Obama-Clinton foreign policy". Mrs Clinton is blamed on the right for her role in offering Russia a "reset" in relations, for clashing with the Israeli government of Binyamin Netanyahu, and for generally squandering her time as America's top envoy. Of her boast of having travelled to 112 countries, one putative Republican challenger, Carly Fiorina, a former boss of Hewlett-Packard, scoffs that: "Flying is an ▸▸

Two decades in the spotlight

Americans expressing a favourable opinion of Hillary Clinton, %



Source: Gallup; *The Economist*

activity, not an accomplishment."

Without a scrap of evidence, many conservatives remain convinced that Mrs Clinton chose out of political calculation not to protect an American mission in Benghazi, leading to the deaths of America's ambassador to Libya and three aides, then sought to cover up her blunders. Such suspicions have not been allayed by the recent revelation that Mrs Clinton used a private server throughout her time at the State Department, preserving for the archives only the e-mails that she deemed relevant and deleting the rest. And she will face queries about donations from foreign governments, some less than democratic, to the Clinton Foundation, a family charity that also serves to keep her in the public eye.

The Democratic grassroots have their own gripes with the Clintons. They have not forgotten that Mrs Clinton voted for George W. Bush's Iraq war as a senator. It took her until March 2013 to come out for gay marriage. But mostly the left of the party worries that the Clintons are too soft on capitalism. They recall Mr Clinton's presidency as a time when the rules on Wall Street banks were loosened, in their view setting the scene for the later financial crash. It remains an article of faith among trade unions that the North American Free Trade Agreement signed by Mr Clinton with Mexico and Canada sucked jobs out of the American heartland.

Standin' on their own two feet

Though no credible Democratic challenger has emerged, many Democrats see (or want to see) a vacuum to Mrs Clinton's left. Mr O'Malley, who as governor of Maryland was hardly a socialist banner-waver, now sides with groups who insist that America can afford to increase federal benefits for the old, breaking with years of broad consensus that Social Security is doomed to insolvency unless benefits are eventually curtailed and taxes raised.

Lots of leftists still long for Senator Elizabeth Warren of Massachusetts to make a populist bid for the presidency, demanding tougher regulation of Wall Street, fewer free-trade deals and more redistribution to the middle class. Mrs Warren says she is not running, but the clamour continues. It is in part an attempt to put pressure on Mrs Clinton to tack to the left.

Some critics worry that Mrs Clinton is too old (she would be 69 in January 2017, making her the second-oldest newly elected president, eight months younger than Ronald Reagan). Others fret about her health (she suffered a blood clot on her brain in 2012). She cannot do much about either charge.

She could deal with a different concern—that no one knows what she really believes—but she is in no hurry. Candidates usually take sharply ideological positions during primaries, to woo the die-

hard activists who vote in them, before tacking back to the centre as the general election nears. However, if Mrs Clinton faces no real primary challenger, she may not need to do this. Instead, she will need to woo enough Democrats to build a sense of excitement and grassroots involvement, without alienating swing voters. And if she cannot achieve the same stellar levels of support among black and young voters that Mr Obama did, she will need to fill the gap some other way.

She has made her pitch to women clear. She stresses her desire to help more of them into the workforce. She solemnly declares that women should receive equal pay for the same work as men (a position with which no one disagrees). In the past she has campaigned to make it easier for women to sue over alleged discrimination.

A big test involves white voters without a college education, who make up about a third of the electorate, but have drifted from the Democrats since Bill Clinton's day. Mr Obama only won 36% of their votes in 2012, and might have done still worse if he had not successfully painted his Republican opponent, Mitt Romney, as their worst nightmare of a boss.

Should Mrs Clinton win the general election, she will also need to be ready on Day One to deal with Republicans. There is virtually no chance that Democrats will win the House of Representatives in 2016, and even if they retake the Senate they will not have a filibuster-proof majority.

Expect Mrs Clinton to run to Mr Obama's right on foreign policy. In interviews since leaving the State Department she has said that she urged him to take a muscular approach to Russia. She has chided Europeans for failing to stand up to Vladimir Putin (she wants them to send arms to Ukraine, for example), while crediting the reset with achieving at least one arms-control agreement and securing Russian help in talks to curb Iran's nuclear ambitions. She has called the latest draft deal with Iran, brokered by America and other world powers, an "important step", whatever that means. Last year she signalled that she would be more comfortable with stricter curbs on Iran's nuclear programme. In a rare overt criticism of Mr Obama, she said in 2014 that the failure to help non-Islamist Syrian rebels fight against Bashar Assad had left a "big vacuum" for Islamic State and other jihadists to fill.

Mrs Clinton has come close to echoing Republican grumbles that Mr Obama is too apologetic about American power. She says that her country cannot solve all problems, "but there's not a problem that we face that can be solved without the United States." While ruling out a return to the hubris of the George W. Bush years, she hints that the time has come for America to re-engage with the world.

In domestic forums Mrs Clinton is fluent in the language of the modern business-friendly centre-left. She is keen on public infrastructure, universal education for the youngest children, lowering the cost of college and experimenting with German-style wage-subsidies for the working poor. She likes to see church groups working alongside strong trade unions and community organisations, and uses "evidence-based" as high praise for any policy. In 2008 she sometimes sounded like a deficit hawk, with slogans like: "We've got to stop spending money we don't have." In 2008 she also called for a "time out" on new trade deals, though as secretary of state she backed new pacts. During primary debates she called herself "committed to making sure Social Security is solvent" and said that the best route to reform lay through bipartisan compromise.

And ringin' on their own bells

Yet even policy experts invited to private sessions with Mrs Clinton in recent months are not sure where she stands. One centrist policy adviser says that, after being quizzed by her about paths to restoring middle-class prosperity, he thinks (and certainly hopes) that she will say that it is a false choice to argue that fairness and economic growth must be in opposition to each other.

Such centrists would like to hear her thank Mr Obama for saving the economy from disaster after the financial crash in 2008 and praise him for expanding health care. Then she could change the subject, turning the country's attention to the task of building an economy for the 21st century, harnessing growth to boost middle-class wages. If it sounds to voters more like a third term of Bill Clinton than four more years of Mr Obama, that would suit many Hillary-backers just fine. ■

Rand Paul

Rand's stand

LOUISVILLE

A libertarian pitch for the White House

HE IS a senator and the son of a former congressman who ran for president three times. Yet he can, with a straight face, kick off his own run for president by denouncing the "Washington machine" and calling for people to "rise up" against it. On April 7th Rand Paul became the second Republican formally to announce his candidacy. Mr Paul sells himself as a man of fresh ideas who will broaden the appeal of his party. He is serious: unlike his father Ron, a crotchety libertarian who ran mostly to make a point, he believes he can win—not just the Republican nomination, but the election itself.

Mr Paul is, as he claims, a relative newcomer to Washington. He was first elected to the Senate in the Tea Party wave of 2010—his first ever public office. Before that, he was an ophthalmologist in Bowling Green, a small town in Kentucky. But he is nonetheless steeped in politics, having spent much of his youth working on his father's campaigns. His rise has been accelerated by a network of dedicated libertarians assembled by his father. These supporters, some in bow-ties and many waving American flags, now follow the tousle-haired Mr Paul around the country (in Kentucky your correspondent encountered one who had travelled from Wisconsin in the hope of giving him a 150-year-old book).

Mr Paul has attempted to build his own political brand, libertarian but more pragmatically so than his father (for example, he does not want to abolish the Federal Reserve). His announcement speech in Kentucky was typical. Some of what he called for was conservative boilerplate: an end to "big government and debt" and a balanced-budget amendment to the constitution (which will never happen). But in several areas he laid out policies that set him apart from the Republican old guard.

On Iran, Mr Paul was careful to attack Barack Obama for being a weak negotiator. But he also sounded a dovish note. "Everyone needs to realise that negotiations are not inherently bad," he said; adding that war should be the last resort in stopping Iran from acquiring a nuclear bomb. He called (implausibly) for "any law that disproportionately incarcerates people of colour" to be repealed. (He has long campaigned for less harsh penalties for non-violent criminals and drug users.) He stressed that he wants to improve life for people in Appalachia, Detroit and other "impoverished areas". He attacked Mr Obama's National Security Agency, arguing that "the phone records of law-abiding citizens are none of their damn business."

Mr Paul hopes that such policies will appeal to young voters and minorities. He attacks his own party almost as fiercely as he does Democrats. Yet while his speech in Kentucky did not make much of it, Mr Paul is in some ways deeply conservative. He has sponsored a law that would ban all abortions, even in cases of rape or incest. He opposes a federal ban on gay marriage but thinks states should decide for themselves whether to allow it—personally, he opposes it. His foreign-policy views have hardened: once he decried most interventions abroad; now he denounces Islamist terrorists as forcefully as any hawk.

Rand against the machine

His pitch to minorities may partly be an attempt to atone for past mistakes. In 2013 it was revealed that a member of his staff had once secretly worked as a white-supremacist radio host called the "Southern Avenger". (The staffer resigned.) In 2010 he suggested in an interview that the federal government had no right to tell private businesses whom they could serve or hire; he quickly backtracked and said that the Civil Rights Act's bar on racial discrimination was right.

To win, Mr Paul will have to convince enough Republican primary voters that his small-government virtues outweigh his squishiness on national security. That is a hard sell—libertarians are probably no more than 11% of the American electorate. Still, his efforts to introduce new ideas and woo new voters will probably help the Republicans in the long run. ■

Guns and anger

Trigger happy

ATLANTA

A new study finds that 9% of Americans are armed and impulsive

ON A grassy strip in South Carolina, a black man turns and runs from a police officer. The cop fires eight bullets at him, leaving him dead. Michael Slager said he shot Walter Scott in self-defence after Mr Scott took his taser. But after a video of the killing went viral—which showed that Mr Scott was perhaps 20 feet away when Mr Slager started shooting at him—the policeman was charged with murder on April 7th. Peaceful demonstrations erupted in the streets.

Mr Scott had been stopped for driving a car with a broken tail light. Relatives speculated that he might have run away from the policeman because he owed child support and did not wish to be jailed for failing to pay it. Many were astounded that he should have died over something so trivial. However, the fact that bystanders nearly always have cameras in their smartphones means that police are finding it harder than ever to commit abuses without consequence.

Cops are not the only ones who have trouble controlling their anger. A new study in *Behavioural Sciences and the Law* finds that about 9% of American adults have a history of "impulsive, angry behaviour" and possess a gun not required for their work. Some 1.5% have anger issues and carry a gun outside the home. Granted, the study used a broad definition of "angry and impulsive", including anyone who admitted to having had a tantrum (violent or otherwise), smashed objects or got into a physical fight in the previous five years. But still, these are worryingly big numbers.

The authors, from Harvard, Duke and Columbia Universities, drew upon 5,600 interviews conducted as part of an earlier Harvard study. They found that angry people with six or more firearms were four times more likely to carry guns around with them than happy owners with only one weapon.

Fewer than one in ten angry, armed Americans had ever been admitted to hospital for a psychiatric or substance-abuse problem, the study found. So laws to stop mentally ill people from buying guns will only do so much to keep impulsive fingers away from triggers.

Drought in California

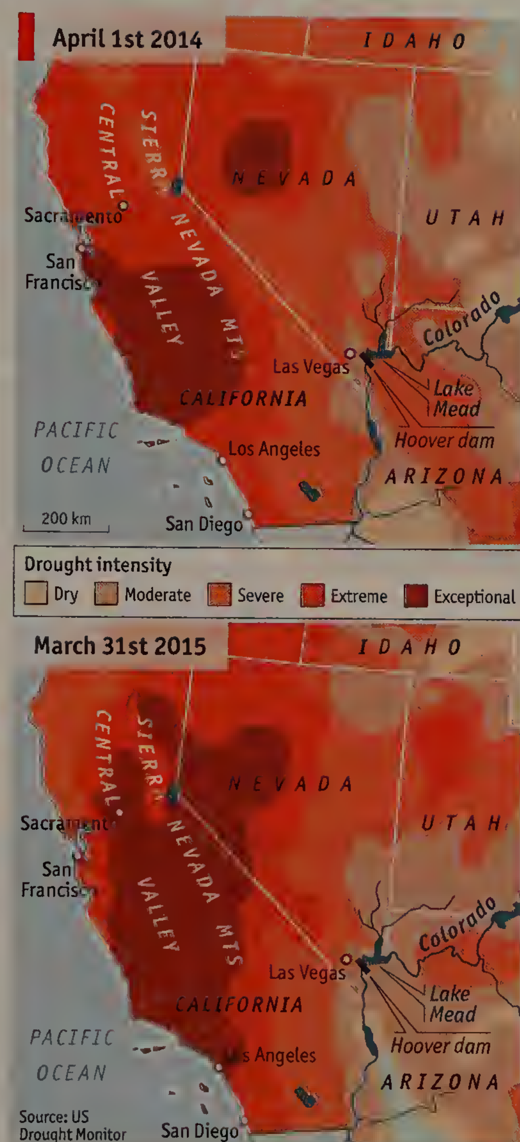
The price is wrong

LOS ANGELES

Why is the Golden State so bad at managing water?

CALIFORNIA is no longer taking a laid-back approach to drought. On April 1st, for the first time, the Golden State imposed mandatory curbs on water use. Governor Jerry Brown ordered 400 local water-supply agencies, which serve 90% of residents, to deliver 25% less over the coming year. Communities that have already reduced water usage in recent years—such as Los Angeles County—will be less affected than their splash-happy neighbours.

Mr Brown put his foot on urban hosepipes while letting farmers carry on merrily wasting water, for which they pay far less than urbanites. Agriculture sucks up about 80% of the state's water (excluding the half that is reserved for environmental uses). Farmers have guzzled ever more water as they have planted thirsty crops such as almonds, walnuts, and grapes. Meanwhile, urban water use has held relatively steady over the past two decades, despite massive population growth, thanks to smart pricing and low-flow toilets. Per-capita water use in California has declined from 232 gallons a day in 1990 to 178 gallons a day in 2010.



Last year the governor called for all Californians to cut their water use by another 20%; residents fell short of that mark in every month except December. Mr Brown's plan imposes restrictions on golf courses and cemeteries. It also calls for the state to replace 50m square feet (465 hectares) of lawns with drought-friendly planting. On April 5th Mr Brown defended his decision to go easy on farmers, saying that many of them are "really suffering". Last year they let roughly 10% of the state's irrigated land go fallow because of the water shortage. Farmers who have already planted their crops cannot instantly switch, but residents can take fewer showers.

Critics are unmollifed. California cannot solve its water crisis without pricing the stuff properly and dealing with those who consume the most. For years, it was the only state in the West that did not manage how much groundwater landowners could extract from their private wells. Last year, finally, the governor signed a bill to regulate groundwater extraction.

It will take decades to implement the law, however. Communities are required to complete plans for sustainable water management by 2020, but not to manage their water sustainably until 2040. Also, although the water piped into urban bathtubs is carefully metered, the state cannot yet monitor groundwater consumption in California. "You can't cut back what you can't measure—it's as simple as that," grumbles Andrew Fahlund of the California Water Foundation, a green group.

Other places have dealt with drought better than California. Israel, for example, has built large desalination plants that helped the country, which is 60% desert, cope with a seven-year drought between 2004 and 2010 and the driest winter on record in 2013-14. In California, desalination is harder because electricity is costly, thanks to a renewable-energy programme. And green rules make building anything slow. A company called Poseidon will this year complete a $1 billion desalination facility to increase San Diego's water supply by 7%, but only after six years of permitting and litigation. Many other desalination projects around the state have stalled or simply been abandoned. ■

Chicago

Rahmbo returns

CHICAGO

Voters opt for fiscal realism over "Hanukkah Harry"

ON APRIL 6th, to the strains of "La Bamba", Jesus (Chuy) Garcia promised that "Tomorrow, history will be written" and fired up his supporters with the battle cry: "Let's take Chicago!" The next day he lost. Rahm Emanuel, the incumbent mayor, received 56% to Mr Garcia's 44%. Turnout was low: only 40% of voters bothered to go to the polls.

Both candidates were Democrats. Mr Emanuel represents the party's business-friendly wing; Mr Garcia, the big-government left. Mr Garcia was handpicked by Karen Lewis, the head of the teachers' union, for his solid record in local politics and his pleasant manner. He did better than expected, earning 34% of the vote in the first round in February and forcing Mr Emanuel into a run-off. But in the seven weeks since, he failed to persuade Chicagoans that he has the skill and stamina to tackle the city's disastrous finances. Mr Emanuel, a former White House chief of staff, made this the main theme of the campaign.

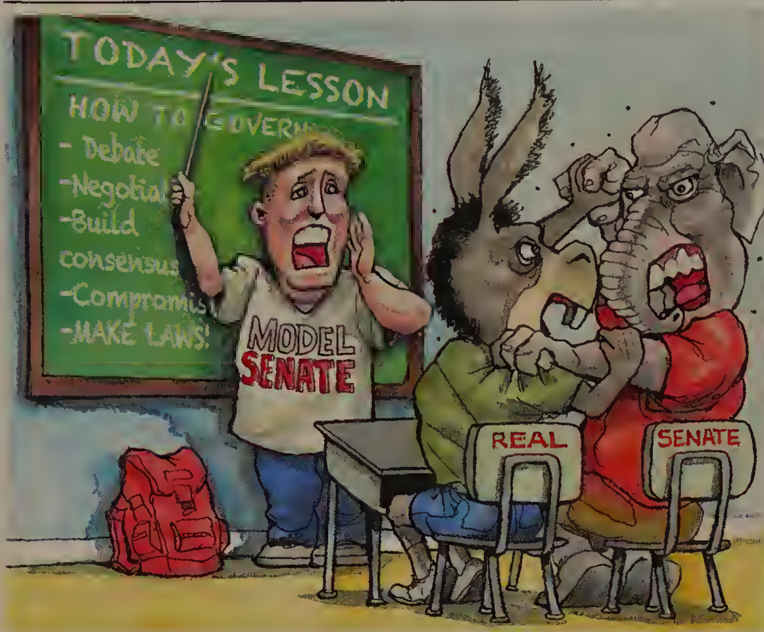
In the last of three televised debates, Mr Garcia said he needed to audit the city's books before he could say anything specific about cutting spending or raising taxes. He refused to reveal who would be on a commission of financial experts that he planned to convene. His only concrete proposal was to slap a luxury tax on expensive jewellery and fancy cars.

Comparing Mr Garcia to "Hanukkah Harry", a sort of Jewish Santa Claus who promises everything to everyone, Mr Emanuel outlined a plan to avert financial Armageddon by imposing a sales tax on services, opening a casino and paying for development projects out of the revenues they are expected to generate. The casino alone will generate $1 billion for Chicago over the next ten years, he said.

With unfunded pension liabilities of more than $20 billion, an operating-budget deficit of more than $300m and a payment of $550m for the pensions funds of police and firemen due at the end of this year, America's third city is veering toward insolvency. In February Moody's, a credit-rating agency, downgraded Chicago's debt to two notches above junk. Analysts say Mr Emanuel will need to raise property taxes, in spite of pre-election promises, as his other measures will not suffice to right the sinking ship. "Once the vote is over, economics will dominate the agenda," predicts Paul Green of Roosevelt University. More pain is in store for Chicagoans. ■

Lexington | Imitation games

A mock Senate for kids works better than the real thing



YOU can learn a lot from games that simplify and ape real life. Never do business with someone who cheats at "Monopoly". Treachery is an asset in "Risk". Performing open heart surgery, as in "Operation", is harder after a few beers.

Over Easter Lexington learned a thing or two attending a $79m mock Senate that just opened on the shores of Boston Harbour. The students took it seriously: one even staged a mock-filibuster, full of high-falutin' rhetoric and puff-chested outrage. Indeed in some ways the teenage "senators" outdid real ones, a discovery that is both uplifting and a bit heartbreaking.

Start with the uplifting. It is cheering to see the legislative branch stripped to its core principles, and to realise that the system can work. Great care has gone into the Senate Immersion Module (SIM) used at the Edward M. Kennedy Institute for the United States Senate, following a vision described by the late senator before his death in 2009, and made real by his family and a bipartisan group of backers. Democratic and Republican Senate staff have worked with think-tanks and universities to simulate the way that senators are tugged and pulled between party loyalties and the interests of 50 different home-states. Each day the institute, housed in an elegant white and grey complex beside the John F. Kennedy Presidential Library, will focus on a single issue. This may be topical, such as immigration. It may be historic, such as the Compromise of 1850, which tried but failed to prevent the civil war by appeasing both slave-owning and free states.

School groups spend a total of two hours in committee meetings, party huddles and a final debate in the chamber. Each visiting pupil receives a detailed Senate identity via a digital tablet. A student might be a Louisiana Republican hoping to run for governor, who stands for national security, stern immigration laws and lower taxes; or a first-term Democrat from Alaska who faces a tough re-election fight in a conservative state where oil and fish hold sway.

The first group to visit, from the Auburn High School in Massachusetts, considered a big immigration bill. Guided by actors playing congressional staff and government officials (one reduced to mock-tears after a bruising confirmation hearing), the students strove to reconcile the demands of farm states and big business, liberal activists and shrink-the-government types. The mood grew authentically grumpy. Mock-Democrats talked up the concessions they were making. Students playing Republicans retorted that they were being asked to give up far more, thanks to amendments that would increase public spending and reward those who "just hop the borders". The teenager cast as a Texas Republican channelled a real-life firebrand from that state, Senator Ted Cruz, and growled that, "worst come to worst," he would try to shut the government down. But all kept bumping up against the rules of the Senate, with voting thresholds designed to thwart those pushing for total victory over the opposition.

Some may scowl at a Kennedy Institute promoting bipartisan governance. In more than 46 years representing Massachusetts, the senator was a divisive figure—a big-government Democrat who often called conservative policies not just wrong but heartless. In addition to school groups, his institute hopes to lure 175,000 individual visitors a year. Admirers will enjoy a recreation of Kennedy's office on Capitol Hill, complete with family photos, an Irish road sign bolted to one wall and, on the floor, tennis balls as played with by his dogs. Critics may splutter at an exhibit named "The Lion of the Senate", hailing Kennedy as a champion of federal action in such fields as education and health care.

Sceptics should give the institute a chance. It is a shrine to the Senate, more than a temple to its founder. Between school groups, adult visitors are also invited to stage brief debates in its replica chamber. One such debate proved pretty even-handed. After a bit of bashfulness, some visitors rose to demand more liberal immigration laws, while others declared that in a world full of would-be migrants, America "can't just be Mr Nice Guy".

Institute bosses have worked hard to give both parties a say. Its immigration SIM was reviewed by Democratic Senate staff but also by aides to Senator John McCain, a Republican who from 2005-07 worked closely with Kennedy on bills that would have tightened border security while giving millions of unlawful migrants a pathway to citizenship. A future SIM on the Patriot Act (a sweeping counter-terrorism law passed after the September 2001 attacks) is being devised by the McConnell Centre at the University of Louisville in Kentucky, founded by Senator Mitch McConnell, the Republican majority leader. It will ponder the trade-offs between freedom and security.

Politics without the pomposity

In one respect, the new project does take sides: it stands for a legislative branch that works. As the institute's president, Jean MacCormack, says: "We're unashamedly biased towards the intent of the Founders: a functioning Senate." Its Republican supporters are from the governing wing of the party—not from the wing that would blow Washington up. Mr McCain spoke at the institute's opening, recalling shouting matches with Kennedy, and mourning him as a friend who knew how to make "incremental progress on the problems of our time".

That is where heartbreak intrudes, when watching teenage mock-senators trying to craft laws which might do some good. They can do this, in part, because they face no pressure to raise millions in campaign funds. No outside groups rank them on ideological score cards. The teenagers argue, sometimes hotly, but about principles and home-state interests. They need not fear primary challenges from hardliners who scorn the very idea that decisions with broad, nationwide support enjoy special legitimacy. The youngsters' Senate is only a game. Professional politicians should ponder why it works so well. ■

Normalisation with Cuba

The thrill of the thaw

Also in this section

MIAMI

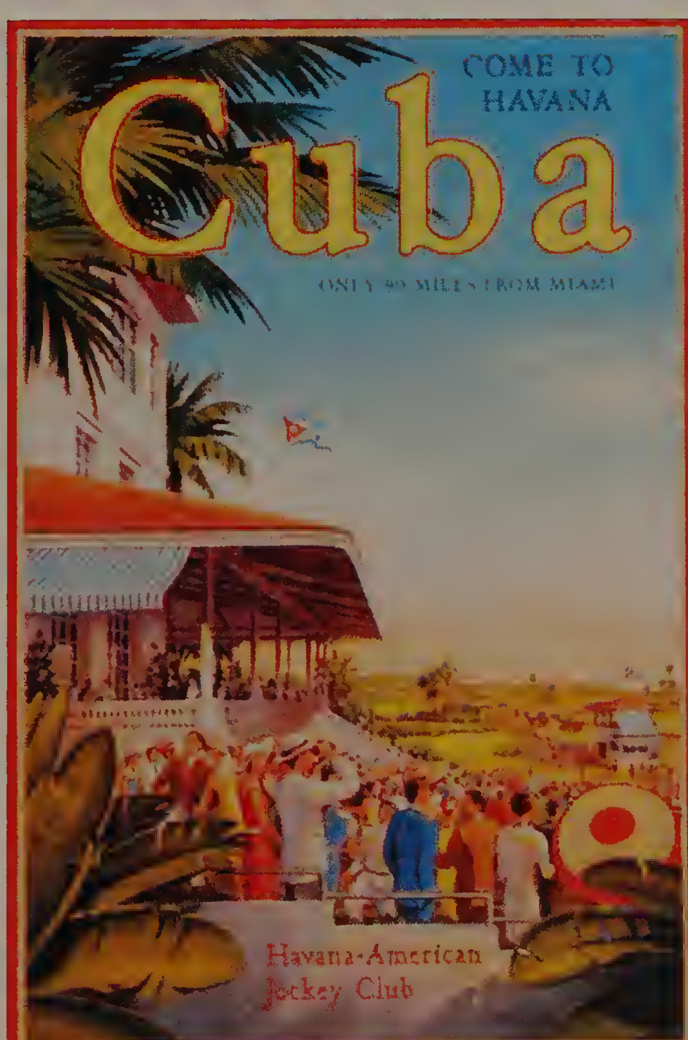
American business is eager to cross the Florida Strait, but obstacles remain

IN THE late 1950s, when the Fabulous Rockers were hitting the big time, their hometown of Ybor City, near Tampa, Florida, was like Havana today: run down, its hand-rolled cigar industry an historic relic. In those days, the place to be was not Tampa or Miami, but Havana, which for Florida bands was as tantalising as Las Vegas.

They never made it. In 1959 Fidel Castro's revolutionaries took power. Less than two years later Dwight Eisenhower imposed an embargo, and most ties were severed for the next 54 years. The band's members did not give up on their dream. On May 15th they hope to fulfil it by headlining at the celebrated Hotel Nacional, on the seaside Malecón in Havana. "We're very excited," says Manuel Fernandez, who plans to lead 60 ageing groupies to Cuba to hear the band, now called the Ybor City Rockers. "It's monumental."

Rock gigs are not the only opportunities that have been opened up by President Barack Obama's dramatic announcement on December 17th that restrictions on travel to and trade with Cuba would be eased. Lawyers, travel executives, bankers, farmers and tech moguls, among them Google's top brass, are heading to the island to scope out business opportunities in a post-embargo future. Their excitement has mounted further with the approach of the Summit of the Americas in Panama City on April 10th and 11th, where Mr Obama and Raúl Castro, the Cuban president, are expected to meet for the first substantive discussions between American and Cuban leaders in more than 50 years (see Bello on page 33).

Although the mood is giddy, the obstacles to trade and investment remain formidable. The December 17th agreement opened a chink in the trade blockade: it allowed more Americans to visit Cuba without special permits, enabled them to spend more money there and to send more remittances. It also permitted banks and telecoms firms to take steps toward operating in Cuba. The State Department's designation of Cuba as a sponsor of terror subjects the country to sanctions that terrify banks. It is likely to be taken off the list soon.



And they're off, again

But the embargo still forbids most American trade and investment, and can only be removed by Congress. Before it is lifted, lawyers say, at least some of about $7 billion of claims by American citizens and companies that lost property after the revolution needs to be paid.

On the Cuban side, the state still controls vast tracts of the economy, including foreign trade, banking and law. A dual-currency system is proving difficult to dismantle because of a lack of hard currency. Inefficiencies and arbitrary decision-making can make doing business in Cuba a nightmare. One foreign businessman active in the country says investors stay away because some have been jailed without due process. That, he believes, even explains why there is so little Chinese investment.

Three types of American business are seeking entry into Cuba, by three different routes. The first are mom-and-pop entrepreneurs, mostly Cuban-Americans who have a personal stake in the island's development. They have been active in Cuba all along, visiting relatives and putting cash (illicitly) into their fledgling enterprises. The easing of the embargo has given such business a boost. Many small-scale merchants can be found in Hialeah, a Miami suburb. As Carlos Loumiet, a Cuban-American lawyer at Broad and Cassel in Miami, puts it, "Hialeah, not downtown Miami, is the economic engine for what is happening in Cuba."

Amid the suburb's boxy houses are stores whose fortunes are tied to the island, such as travel agencies and remittance firms. A vast warehouse called Ñooo Que Barato!! ("Holy Shit, It's Cheap!!") sells uniforms in Cuban school colours at $10, along with shoes, underwear and perfumes that are often bought by the pound and smuggled into Cuba in duffel bags known as "worms". Among the hottest items, says the store's owner, Serafin Blanco, are $3.99 bags of flints for mending old lighters; they easily escape detection by Cuban customs officials. Fabián Zakharov, a Russian-born Cuban in Hialeah, imports parts for Lada cars from Russia. His customers take them to Cuba in suitcases to help friends and relatives fix up their old bangers.

Easier travel will drum up new business for private guesthouses, restaurants and other small enterprises that have opened up after a cautious liberalisation by Cuba's communist government. Their financial backing comes largely from remittances from the United States.

Some see the spur to ground-level go-getting as the cleverest part of Mr Obama's strategy. It bolsters independent entrepreneurs, who are likely to be supporters of the dialogue between the United States and Cuba and of the reforms that may flow from it. "This is being driven by grassroots capitalism there and here," Mr Loumiet says.

But the embargo, and Cuba's entrenched suspicion of enterprise, sets limits. The Castro government still makes it almost impossible for most private firms to import supplies or to receive foreign investment. Mr Zakharov says his business suffered recently because ▸▸

duties on car parts have soared. In Cuba owners of private restaurants, or *paladares*, complain that the government tries to stop them from importing such items as exotic spices—a deliberate attempt, they say, to keep them from flourishing.

The second type are bigger businesses hoping to piggyback on greater travel and information exchanges. In February Netflix, which lets you stream films over the internet, said it was launching its service in Cuba. Although the company cautioned that few Cubans have broadband connections or access to credit cards, people returning from Cuba say that some wily locals have subscribed to Netflix and turned their homes into informal cinemas to defray costs. In February IDT Corp, a telecoms company based in New Jersey, pulled off a surprise deal establishing the first direct connection between an American company and Etecsa, Cuba's state telecoms company. Talks had gone nowhere for much of the previous four years.

Direct charter flights to Cuba started in March from New York and New Orleans, adding to dozens a week from Miami and Tampa. Ferry operators are talking to American and Cuban authorities about relaunching direct ferry routes from the Florida Keys, but that may take time. American immigration officials worry that the vessels will bring an influx of illegal immigrants. Cuban officials fear a surge of illegal imports. This month Airbnb brought the sharing economy to Cuba by offering American visitors rooms in private homes. That is allowed under the new American rules because it supports microbusinesses.

The third route, taking the biggest American brands into Cuba, is the most difficult. Cuban officials shudder at the thought of a McDonald's in downtown Havana. American airlines are keen to start scheduled flights to Cuba, but first the two countries need to sign a new air-service agreement. In negotiating that, lawyers say, Cuba will want to ensure that its own aircraft are not seized in the United States as forfeit for American property confiscated during the revolution. That may prove as tough as lifting the embargo.

Jamming with the Rockers tomorrow?

Hotel owners also want to enter a Caribbean paradise on America's doorstep, not least because the embargo has given foreign resort operators, such as those from Spain, a headstart. Pedro Freyre of Akerman, a Florida law firm, calls mass tourism the "Willy Wonka golden ticket". Yet he notes that while the embargo exists there is no scope for the sort of joint ventures that Spanish, Canadian and other hotel chains have entered into. Even if there were, Cuba lacks the energy, food and infrastructure to support millions of American tourists.

Overshadowing all potential business relationships is the embargo's ban on the provision of credit. American banks give Cuba the widest berth. Until Cuba is removed from America's list of sponsors of terrorism, there is "no way an American bank can touch a Cuban bank", says Fernando Capablanca of the Miami-based Cuban Banking Study Group. Even American firms allowed to trade with Cuba under the embargo, such as grain exporters, are often thwarted because they cannot obtain letters of credit.

The hurdles are not stopping lawyers from preparing for what may lie ahead. Law firms have drafted Iranian specialists into their Cuba teams to advise on a post-sanctions future. The Florida Bar is planning to send a team of international lawyers to Havana in May to learn about Cuba's judicial system. Some have contacted Spanish, Canadian and Brazilian lawyers to find out about their experiences in dealing with their counterparts on the island. "We have heard horror stories," says James Meyer of Harper Meyer, a law firm.

The enthusiasm in the face of obvious pitfalls suggests an element of blind faith. "If we don't see the Cubans move towards a more liberal foreign-investment and trade regime, you will see a lot of this excitement disappear," says Ricardo Herrera of Cuba Now, a pro-Cuba advocacy group.

Yet progress, though slow, is probably unstoppable. The Cuban government may become so dependent on American dollars as a substitute for reduced aid in the form of subsidised oil from crisis-ridden Venezuela that it will have little choice but to continue to reform. The Obama administration has craftily raised expectations to such a degree that backsliding now seems unthinkable, visitors say. Mr Herrera tells the story of a Cuban couple who, after Mr Obama's announcement in December, put away their condoms and for the first time set about trying to have a baby. For some older Cubans, the thrill of the thaw will come from the Ybor City Rockers. ■

Elections in Bolivia

No, MAS

LA PAZ

Voters rebuke Evo Morales and the ruling party

ON WINNING power nine years ago, Evo Morales, Bolivia's president, touted his victory as the end of 500 years of colonial rule. Bolivia may have been independent since 1825, but its rulers had the outlook of the imperialists. Change came at last with Mr Morales's indigenous resistance movement. It would govern "for the next 500 years", he proclaimed.

The president's mastery of theatre and symbolism, and his rewriting of the constitution to reinforce the rights of Bolivia's large indigenous population, go a long way toward explaining his enduring popularity. In elections last October he easily won a third term. His Movement To Socialism (MAS) claimed two-thirds of the seats in both chambers of the legislature. Supporters began talking of a fourth term in office starting in 2020, even though under the constitution he is not eligible to run again.

So the results in regional and local elections held on March 29th came as a shock. Opposition candidates for mayor won in eight out of Bolivia's ten largest cities, up from five at the last vote in 2010. The MAS won four of the gubernatorial races in the nine autonomous administrative departments (like states), down from seven last time. In two where nobody won a majority, run-off votes are to be held on May 3rd. The vote count in a third awaits an official ruling on a run-off. In those states splintered anti-government forces have an opportunity to unite behind a single candidate. The vote was a stinging rebuke to the ▸▸

MAS, and a warning to Mr Morales.

Most worrying for the governing party was its performance in the department of La Paz, until now a stronghold. It lost both the governorship of the department and the mayor's race in El Alto, a sprawling settlement populated mainly by indigenous Aymara voters, Mr Morales's keenest supporters. The opposition mayor of the city of La Paz, Bolivia's seat of government, was re-elected with a bigger majority. Although the MAS enjoyed the benefits of incumbency and the backing of the highly partisan state-run media, it received just 41% of the votes, down from 61% in October's national election. Before the balloting Mr Morales threatened not to co-operate with opposition mayors and governors, a tactic that may have backfired.

He pinned the blame for the MAS's poor performance on corruption at regional and local governments and, oddly, on machismo (the victorious opposition candidate to be mayor of El Alto was a woman). Carlos Mesa, a historian and former president, thinks voters are beginning to resent the self-serving way in which the MAS exercises power and are less impressed by the moral authority that comes from its indigenous origins. They are "no longer willing to provide a blank cheque," he says.

The president is much more popular than his party, which nevertheless remains a formidable force. The MAS was the only party to field candidates in all seats, and won more than two-thirds of the 339 mayoral elections. Its local branches are nourished with funds from a powerful national organisation. The opposition is fragmented into mostly tiny parties, none of which is strong enough to take on Mr Morales and the MAS countrywide. Their reign will not hit the 500-year mark, but it could go on for quite a while longer. ■

Bello | A warmer Latin climate for Obama

The region will start to put pragmatism ahead of ideology in dealing with the United States

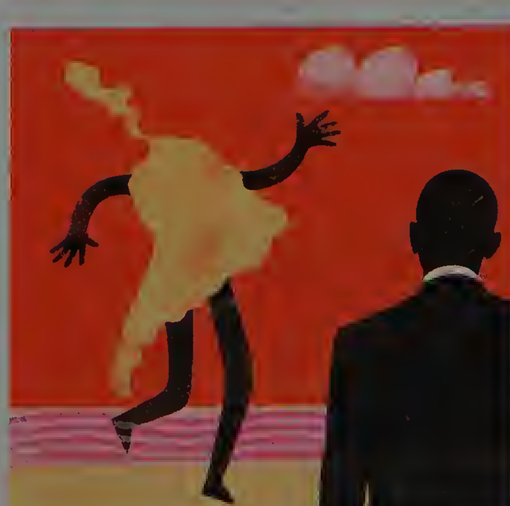
LATIN AMERICA can be tricky ground for leaders of the United States. In 1958 Richard Nixon, then the vice-president, survived an attack on his car by enraged students in Caracas. Ronald Reagan was widely mocked after he confused Brazil with Bolivia during a speech in Brasília. At a Summit of the Americas in Argentina in 2005 George W. Bush was greeted by a mass rally organised by the host, Néstor Kirchner, at which his country's plan for a Free Trade Area of the Americas was denounced by Venezuela's leader, Hugo Chávez. Four years later, at a similar summit in Trinidad, Chávez presented Barack Obama with an anti-imperialist tract.

Mr Obama's staff doubtless thought that their boss would be greeted as a hero at the latest summit in Panama, to be held on April 10th and 11th. At Latin America's insistence, this is the first such get-together (they started in 1994) attended by Cuba. Partly with an eye to that, in December Mr Obama announced plans to restore diplomatic and some business ties with Cuba. This is a huge step towards lifting America's 54-year-old economic embargo against the island. And while many Latin Americans dislike Cuba's Fidel Castro and his brother, Raúl, the country's current president, they dislike the embargo even more.

Two things threaten to mute the cheers in Panama. First, talks over reopening embassies have been going more slowly than some had hoped. The United States wants its diplomats to be able to travel and operate freely on the island. Cuba wants the State Department to remove it from a list of state sponsors of terrorism (where it is joined by Iran, Sudan and Syria). Until this happens no bank will do business with a Cuban diplomatic mission. American officials say the result of the State Department review might be announced in Panama. Mr Obama and Mr Castro will "interact" informally in the corridors of the summit.

The second dampener is Venezuela. Last month the Obama administration implemented a law that imposes sanctions on seven Venezuelan officials for violations of human rights. That has given Nicolás Maduro, the country's embattled president, a chance to turn the summit into another anti-imperialist rally. His demand that it formally condemn the sanctions has the backing of a handful of hard-left regimes, including Cuba's. Few Latin Americans like unilateral interventions by the United States, and the sanctions undercut a (feeble) attempt by the South American Union to mediate between Venezuela's autocratic regime and the opposition.

Beyond the headlines of discord, changes are afoot in Latin America that should favour the United States. The first is that Mr Obama has at last come up with some constructive policies towards the region. As well as the opening to Cuba, these include immigration reform, a downplaying of the war on drugs and a request to Congress for $1 billion in aid to mitigate the drug war's impact on Central America. The administration is also trying to help energy-short Caribbean countries.



Second, the end of the commodity boom is altering the politics as well as the economics of Latin America. Economic growth this year is set for just 1%, the worst performance since 2009. The region's "pink tide" of left-wing governments is ebbing. Brazil's Dilma Rousseff, confronted with a massive corruption scandal and the likelihood of a deep recession, is struggling to keep her job. Argentina's Cristina Fernández de Kirchner departs in December; her successor will be more moderate. Even Bolivia's Evo Morales and Ecuador's Rafael Correa, the most successful members of South America's awkward squad, have seen opponents make gains in municipal elections. Mr Maduro will be greeted in Panama by a demand from 22 ex-presidents of the centre and right that he free opposition prisoners.

This does not mean a return to the 1990s and the monolith of the "Washington consensus" on market economics. China, now Latin America's second-biggest trade partner, is in the region to stay. Some of Mr Obama's policies might be scrapped by a Republican successor. How the region's expanded middle classes will react to the economic slowdown is unclear. Inequality, the left's main banner, remains a big concern.

What it does mean is that pragmatism will start to get the better of ideology. Ms Rousseff plans a visit to Washington, to replace the state visit she scrapped in 2013 over revelations that the National Security Agency spied on her. Her trade minister, Armando Monteiro, visited in February "to give the message that the relationship with the United States is a priority". Others in the region are likely to make it one, too.

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Economic policy in Japan

End of the affair

TOKYO

The government of Shinzo Abe is increasingly at odds with the central bank

AN EARLY strength of Abenomics, the plan of Shinzo Abe, the prime minister, to revive Japan's economy, was the tight bond between Mr Abe and his hand-picked central-bank governor, Haruhiko Kuroda. Former chiefs of the Bank of Japan had adopted a defeatist stance towards Japan's deflationary morass. Mr Kuroda, the prime minister believed, was a champion of his desire to revitalise Japan in large part through unorthodox monetary loosening. In early 2013, soon after Mr Abe took office, the central bank duly launched a radical programme of quantitative easing.

But now the two men appear at loggerheads. The main point of contention is fiscal policy, which to date has been very loose, with a primary budget deficit (that is, excluding interest payments on debt) of 6.6% of GDP. Mr Kuroda (pictured above) is making it clear that he does not believe Mr Abe is trying hard enough to bring the deficit down. The government, meanwhile, would prefer him to confine his remarks to the bank's monetary remit.

A second and related difference is emerging over monetary easing itself. In the quest to rid Japan of deflation, Mr Kuroda promised whatever it took to push inflation up to 2%. The Bank of Japan may not be doing enough to achieve this. Prices are at a standstill. Yet the government appears to be signalling that a fresh bout of bond-buying might be too much of a good thing. Having ordained the inflation target, Mr Abe now appears to be undermining Mr Kuroda's ability to reach it.

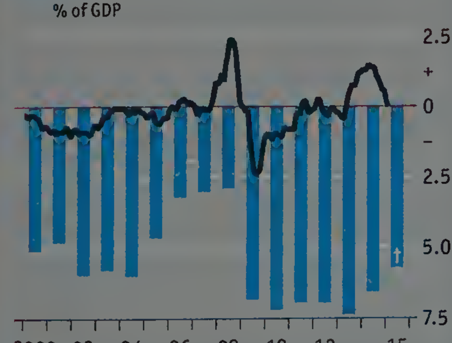
For businesses and households alike, such discord is itself a cause of anxiety. At first, Abenomics appeared to be going well. While the bank printed money, the government spent more to help ease the pain of a long-planned rise in the consumption tax, from 5% to 8% in April 2014. Stronger growth resulting from structural reforms was supposed to soften the effect of a planned second rise in the consumption tax, to 10%, this autumn. The government would then gradually fulfill a long-standing commitment to achieve a primary budget surplus by 2020-21. Japan's gross national debt, at around 240% of GDP, is easily the rich world's highest.

Contentious numbers

Japan's:

core consumer prices*, % change on a year earlier

budget deficit before interest payments, % of GDP



Sources: Thomson Reuters; OECD; *The Economist*

*Excludes impact of consumption-tax rise †Forecast

Things have not worked out that way. The first rise in the consumption tax helped tip the economy back into recession. In response, Mr Kuroda surprised nearly everyone last autumn by increasing the bank's quantitative easing, promising to buy ¥80 trillion ($670 billion) of Japanese government bonds every year. Certainly Mr Kuroda, a former mandarin from the finance ministry, which is obsessed with fiscal prudence, wanted the government to stick with the plan to raise the consumption tax once more. His hugely expanded easing appeared as though it was intended to strong-arm the prime minister into the tax hike (and irked many at the Kantei, Mr Abe's office). But soon after the central bank's action, Mr Abe postponed the rise anyway until April 2017, arguing that the economy could not bear it.

And so a strange thing: a government that was once gung-ho about the central bank printing vast quantities of money to buy government bonds is now concerned about the risks, given no obvious prospects for an improvement in Japan's fiscal situation, and given that many of its growth-enhancing structural reforms have not materialised. The government would rather the central bank did not expand its buying of government bonds, even though the bank may feel bound to, now that core inflation has slipped back to zero. True, that fall is in part because of a drop in oil prices, which can only be good news for Japan's economy. Many economists reckon that the bank should have chosen a measure of inflation that excludes the cost of energy. Still, zero inflation is far short of the target of 2% ▸▸

that the bank has a mandate to reach. Should deflation return in the coming months, the bank may feel obliged to expand its bond-buying.

Some of Mr Abe's advisers are against more quantitative easing for political reasons as well. It has boosted property and stockmarkets, and driven down the yen, helping big exporters. But many small businesses and households say they are not feeling the benefits, only higher prices for imports. A concern for Mr Abe's advisers—and for the central bank itself—is how the government-bond market has been showing signs of strain. The central bank is by far the biggest buyer of bonds these days, and has chased out other market participants with its massive purchases. That may make it hard to sell government bonds in future. As it is, the lack of a deep secondary market has led to worrying increases in volatility. To forestall further easing, some advisers even speak about changing the Bank of Japan's 2% inflation target to a more modest one, of perhaps 1%.

Meanwhile, in the face of a government that is reluctant to cut spending now, hoping for higher growth and tax receipts later, Mr Kuroda is airing his misgivings with unusual bluntness, preaching the need for immediate fiscal discipline. Hiroshige Seko, a senior government official, plays down the differences. Both Mr Abe and Mr Kuroda, he says, are trying to balance the need to reduce debt against that of boosting the economy. But, he claims, Mr Abe has edged very slightly towards an emphasis on growth and Mr Kuroda very slightly towards fiscal discipline.

There is certainly little to reassure fiscal hawks in the record level of spending budgeted for the fiscal year that has just begun, including swelling outlays on social security as the population ages. Even if the economy grows by 3% in nominal terms in each of the next five years—an optimistic assumption—the government says it will need to find an extra ¥9 trillion to balance the budget, before interest payments, by 2020 as planned.

Mr Abe has promised detailed plans in the summer for reducing future deficits. Swingeing cuts to social-security spending probably remain politically off-limits. Yet radical measures are needed. They will have to include getting elderly Japanese to pay more for their medical care. A health system that keeps too many people in hospital beds for too long needs to be overhauled. And the retirement age needs to be increased further. The most important test of the relationship between Mr Abe and Mr Kuroda will come if inflation picks up in earnest, at which point the central bank will begin to tighten its monetary policy. Mr Abe may insist on keeping the monetary taps open to safeguard growth. A premature falling out may only make that moment harder still. ■

Terrorism in Malaysia

Lurch to illiberalism

An anti-terror law curtails liberties

THREE years ago Najib Razak, Malaysia's prime minister, fulfilled a promise to repeal the Internal Security Act (ISA), a draconian colonial-era law which had long been used to lock up dissenters without trial. In the early hours of April 7th legislators approved a new bill which reinstates some of the old law's power. The Prevention of Terror Act gives a government panel the right to imprison terror suspects for two years, with multiple extensions, or restrict their movements for five years. Critics spy another blow to civil liberties, which were already under siege.

The government argued that the new law was needed to combat a mounting threat from domestic extremists inspired by Islamic State, the militia that occupies large parts of Syria and Iraq. Officials reckon that at least a dozen Malaysians have died abroad fighting for the militants. Police say that since 2013 they have arrested around 90 people suspected of sympathising with them. On April 5th, just hours before Parliament began debating the law, police nabbed 17 people who they said were planning attacks on Kuala Lumpur, the capital, and on Putrajaya, the government seat.

The timing looked suspicious to opponents of the act, which include Pakatan Rakyat, the opposition coalition. Many fewer Malaysians than, for example, Belgians are thought to have travelled to Syria. Nor is Malaysia, a moderately Muslim country, battling provincial Islamic insurgencies of the sort that trouble its neighbours, Thailand and the Philippines. The government has produced no evidence that such sweeping powers are warranted, the International Commission of Jurists, a human-rights group, claims. It laments that only one member of the government's detention panel need have legal experience. Even without the panel's consent, police may now hold suspects for up to 60 days.

The big worry is that the law will become a new weapon in a worsening crackdown on opponents of UMNO, Mr Najib's party, which has ruled Malaysia in coalition since the 1950s but which was nearly unseated in elections held in 2013. In the first three months of this year police arrested 36 people on suspicion of making comments that violated the Sedition Act, another archaic law which is being invoked more frequently than ever. Last month Nurul Izzah, a prominent MP, was arrested on suspicion of sedition after she delivered a speech in Parliament denouncing the imprisonment of her father, Anwar Ibrahim, who leads the opposition. Many think the sodomy charge against him is politically motivated. Other recent detainees include five staff at the Malaysian Insider, a news website, and a cartoonist called Zunar, who faces nine counts of sedition and a prison sentence of up to 43 years.

Mr Najib had promised to roll back the Sedition Act, just as he promised to junk the ISA. Yet while pushing through the new anti-terror rules, his government took the opportunity to table changes to the act which would greatly toughen sentences and forbid speech that denigrates religion.

Both pieces of legislation highlight how far Malaysia has retreated from the reformist policies that Mr Najib espoused during his first term, which ended in 2013. Supporters plead that the prime minister is tacking right only to head off leadership challenges from even less palatable parts of his party (on April 2nd Mahathir Mohamad, an influential former prime minister, renewed his call for Mr Najib to step down). But that is not much comfort to anyone. ■

Najib rescinds his promises

Politics in Taiwan

Sunflower seeds

TAIPEI

Social movements stir Taiwan's hyperactive democracy

A YEAR ago Taiwanese students occupied the main debating chamber of Taiwan's parliament, the Legislative Yuan, in an unprecedented protest against a trade deal with China. Thousands of people joined demonstrations in support, many of them brandishing sunflowers (see picture): a rebuke to the murkiness of cross-strait negotiations. The impact of the Sunflower Movement and other recent grass-roots campaigns has been wide-ranging. Not only have efforts by Taiwan to liberalise its trade with China faltered, but the island's political chemistry has begun to change too.

Activists are preparing to stage rallies on April 10th to mark the anniversary of the three-week sit-in, which they agreed to end following a promise by the government to give the legislature more oversight of cross-strait agreements (politicians are still bickering over the terms of this). Taiwan's main opposition party, the Democratic Progressive Party (DPP), would be delighted by a high turnout: as the island prepares for presidential and parliamentary elections next January, it welcomes any opportunity to highlight the discomfiture of the ruling Nationalist Party, or Kuomintang (KMT). The DPP has a good chance of winning the presidential polls, although the KMT—despite its recent drubbing in mayoral elections—is likely to keep a majority in the legislature.

The DPP sees former participants in the Sunflower Movement and other social activists as potential recruits. Many of them are young people who feel gloomy about job prospects, and who are quick to blame their woes on China. On March 25th, 119 Sunflower participants were put on trial, accused of offences such as trespass and violating laws on public assembly. One student leader, Chen Wei-ting, told the court that the protesters had saved Taiwan from economic domination by China. Tsai Ing-wen, the DPP's presidential candidate, has hired a few young activists, including Sunflower ones, to lead party departments.

Observers speak of a new "third force" in the island's politics led by such activists who have campaigned on issues ranging from nuclear power to bullying in the army. They sympathise far more with the DPP than with the KMT, but they complicate the strategies of both.

One of them is Fan Yun, an academic who gave street seminars to students about democracy during the Sunflower unrest. She plans to run in next January's legislative elections as a candidate for the Social Democratic Party (SDP) which she launched on March 29th. Other SDP candidates include a lesbian-rights activist who is expected to run in a glitzy commercial district of Taipei, possibly against a stuffy KMT lawmaker who opposes gay marriage. The New Power Party, founded in January by a former heavy-metal rocker and human-rights campaigner, wants formal independence from China.

It is unclear whether any of these and more than a dozen other new parties that have registered in the past year will gain seats in the legislature. Some may merge with the KMT or, more likely, the DPP. Their supporters would help the DPP broaden its alliances beyond those who emphasise "ethnic" differences between original dwellers of Taiwan and immigrants (or their descendants) who fled to the island at the end of the Chinese civil war in 1949. KMT voters alienated by bickering between the two parties over relations with China may be attracted by third-force parties' emphasis on domestic reforms.

The DPP has reason to worry, too. The new parties have profound misgivings about China's economic relationship with Taiwan. As far as DPP leaders go, Ms Tsai is relatively pragmatic and wants to keep relations with China on an even keel, despite her resentment of the KMT's cosiness with China. If she hopes to co-opt the young activists, she may have to take greater risks with the island's truculent neighbour.

Flower power

Even the KMT has adjusted its policies in response to grassroots activism—and not just on matters relating to cross-strait trade. It had long insisted that nuclear power was vital for the island, but in the past year it has halted the construction of a new nuclear reactor complex. The KMT's recently appointed chairman, Eric Chu, says he wants Taiwan to become nuclear-free. That is a big break with tradition indeed. ■

Banning beef in India

The pink and the saffron

DELHI

Protecting cattle is popular. But the meat industry wants protecting too

WHEN the state of Maharashtra banned the slaughter of bulls and bullocks, and the possession of beef, earlier this year, it was bad news for those, mostly Muslims, who turn the state's ageing cattle into leather and cheap cuts. But it was not surprising. Maharashtra is led by the Bharatiya Janata Party (BJP), which hopes the ban will play well with its core Hindu voters.

More startling was a declaration on March 29th by the national government's minister for home affairs. Standing alongside religious leaders who had called for a ban on beef exports, he said that he would try to end cattle slaughter across India. Then on April 6th Maharashtra's advocate-general struck fear into the hearts of non-vegetarians. "This is just the beginning," he said. "We may consider banning slaughter of other animals too."

Very many of India's Hindu majority are vegetarian, and of the Hindu carnivores, most eschew eating cattle flesh. Yet India's beef industry has flourished, with exports growing tenfold in the past decade. The country is now the second-largest exporter of beef, behind only Brazil. The paradox depends on a crucial ambiguity: "beef" in India can refer to the meat of either cattle or buffalo, and India's water buffaloes do not enjoy the sacred status of its cows. Since the government began encouraging farmers to raise and slaughter buffaloes, exports of their meat have boomed. More than 95% of meat exports come from them.

On the campaign trail last year the prime minister, Narendra Modi of the BJP, decried this "pink revolution" (named by analogy with the "green revolution" of the 1960s, in which crop yields soared). But during his first six months in office, India's meat exports grew by 16%. Talking down Muslim butchers plays well with Hindu activists. But since his advocate-general's provocative statement, Maharashtra's chief minister has clarified that the state's ban will not apply to buffaloes—India's cash cows.

Australia's Great Barrier Reef

Judgment day

LADY ELLIOT ISLAND

Australia prepares for a UN ruling on its care of a natural treasure

THE turquoise waters around Lady Elliot Island, a speck on the southern edge of the Great Barrier Reef, look pristine. Coral, turtles, manta rays and brightly-coloured fish thrive. They are lucky. Formed from a cay of ancient coral, the island sits about 80km from the Australian state of Queensland: just far enough into the Pacific Ocean to avoid being affected by human activities that have helped bring the reef to a crisis.

UNESCO named it a World Heritage Site in 1981. Nowhere else, the organisation says, contains biodiversity to match its 400 types of coral, 1,500 fish species and myriad other forms of ocean life. But in June it will decide whether to add it to the short list of world heritage sites—just 46 out of 1,007—it regards as in danger.

In the past 30 years half the reef's coral has disappeared. Marine scientists say people are largely responsible for its decline. Rising sea temperatures and acidification, both linked to global warming; and nutrients and pesticides washed from farms into its waters, help to feed coral-eating crown-of-thorns starfish (see box). The effect on coral skeletons, says John Gunn of the Australian Institute of Marine Science, is similar to that of osteoporosis in humans.

Cyclones have added to the stress. They lashed the reef long before Captain Cook's ship, the *Endeavour*, snagged on its coral in 1770, 18 years before Europeans settled Australia. But the reef always proved resilient enough to recover. In the past ten years, though, six cyclones of Category 5, the highest level, have struck it. The previous one of such intensity in the area was in 1918.

Each has damaged coral and polluted the surrounding water with run-off from farms and cities. Between them the reef has had little time to recover. For Russell Reichelt of the Great Barrier Reef Marine Park Authority, a federal body charged with protecting it, the "burning question" is whether this is climate change in action.

An Australian government report to the UN in January said that protecting the reef would take a "concerted international effort" to reduce climate change. But the country's own foot-dragging on climate action makes it a poor advocate. Tony Abbott, the prime minister, pronounced coal "good for humanity" last October when he opened a new mine in a Queensland coal-mining region inland from the reef; Queensland is one of the world's biggest coal exporters. The remark bolstered his reputation as a climate-change sceptic.

It was a boom in resource exports that prompted the World Heritage Committee to put Australia on notice of the possible change to the Great Barrier Reef's status four years ago. Dredging waste at Gladstone, a southern reef port, was being dumped in waters within the world heritage site to allow some of the world's biggest exploration companies to start exporting liquefied natural gas. A bigger row followed over dredging at Abbot Point, another reef port, linked to coal projects by Adani and GVK, two Indian companies. In late 2013, the government approved a plan to dump about 3m cubic metres of that port's waste inside the reef's waters.

Public outcry forced a rethink. On March 21st Mr Abbott flew to Hamilton Island on the reef to launch Australia's final pitch to the UN to keep it off the danger list. Together with the Queensland state government, his administration will spend about A$2 billion ($1.6 billion) over the next ten years to sustain the reef. Dumping dredge waste from port expansions in reef waters has now been banned.

An "in danger" listing could hit tourism to the reef, which is worth about A$5 billion a year—to say nothing of the country's self-esteem. Australians consider the reef to be a national icon. There are signs of hope. Australia's marine science institute has tracked coral re-growing in several places where environmental pressure has eased, says Mr Gunn. Restoring the whole reef to Lady Elliot Island's immaculate state will be a bigger challenge. ■

Crown-of-thorns starfish

Coral-killers

TOWNSVILLE

A dilemma for the Great Barrier Reef's ecosystem

SINCE scientists first raised the alarm 50 years ago about crown-of-thorns starfish chomping their way through the Great Barrier Reef, there have been three big outbreaks. A fourth, perhaps the most serious, is now under way. The Australian Institute of Marine Science rates the "massive explosion" of this lethal starfish strain as second only to cyclones as a cause of the reef's decline. Several interventions, including fencing coral zones and using navy divers to remove starfish by hand, have in the past proved ineffectual. But scientists at James Cook University in Townsville, a city facing the reef, may finally have found a way to fight back.

Divers have started to inject starfish with a solution made of salts from cattle-bile. A single shot of the substance, discovered by chance during research into starfish diseases, triggers a lethal reaction. So far it has only been used in areas prized by divers and tourists for coral. It has killed more than 300,000 starfish in its first year of use.

Unfortunately, that is only a fraction of the tens of millions of crown-of-thorns starfish thought to inhabit the entire reef. The species has few predators, reproduces profusely and can devastate a reef in months. But it is also native to reefs throughout the Pacific and Indian oceans, raising questions about the impact on ecosystems of slaughtering them wholesale. Normally, their numbers are quite low. Strong evidence links population explosions to floods that wash high levels of nutrients from farms onto the reef.

Australia's latest plan for the Great Barrier Reef, which it hopes will convince the World Heritage Committee not to classify it as endangered, sets targets to cut nitrogen loads in half by 2018 and by four-fifths seven years later. Some sugar-cane farmers along the reef have started cutting back on fertilisers and pesticides; more must follow if the plan is to work. The intensity of cyclones is predicted to rise, John Gunn, the head of the Australian Institute of Marine Science, points out. He argues that enlightened human intervention is essential if the Great Barrier Reef is to be saved from the combined threat of storms, nutrients and the plague of starfish.

Also in this section

Opinion polls

The critical masses

BEIJING

Officials increasingly ask people a once taboo question: what they think

IN RECENT weeks official media have published a flurry of opinion polls. One in *China Daily* showed that most people in the coastal cities of Shanghai and Guangzhou think that smog is getting worse. Another noted the high salary expectations of university students. Yet another found that over two-thirds of respondents in Henan province in central China regard local officials as inefficient and neglectful of their duties. For decades the Communist Party has claimed to embody and express the will of the masses. Now it is increasingly seeking to measure that will—and let it shape at least some of the party's policies.

Since the party seized power in 1949 it has repeatedly unleashed public opinion only to suppress it with force, from the "Hundred Flowers Campaign" in 1956, when it briefly tolerated critical voices, to the student-led protests in Tiananmen Square in 1989. For the past two decades, the party has effectively bought people's obedience by promising—and delivering—a better, richer future. This will be tougher in the years ahead as the economy slows. Members of a huge new middle class are demanding more from their government in areas ranging from the environment to the protection of property rights. So the party must respond to concerns in order to retain its legitimacy.

Xi Jinping, who took over as China's leader in 2012, has shown even less inclination than his predecessors to let citizens express their preferences through the ballot box. Yet the public has become ever more vocal on a wide variety of issues—online, through protests, and increasingly via responses to opinion polls and government-arranged consultations over the introduction of some new laws. The party monitors this clamour to detect possible flashpoints, and it frequently censors dissent. But the government is also consulting people, through opinion polls that try to establish their views on some of the big issues of the day as well as on specific policies. Its main aim is to devise ways to keep citizens as happy as possible in their daily lives. It avoids stickier subjects such as political reform or human rights. But people are undoubtedly gaining a stronger voice.

Chinese whispers

In the late 1980s officials began turning to universities to conduct polls to gauge popular responses to market reforms. The government's agency for environmental protection undertook its first survey in the late 1990s—when environmental concerns were rarely discussed in public—about people's attitudes towards pollution. It invited people to weigh economic growth against conservation (money won). Around the same time party officials organised polls on religious belief.

But for years the use of such methods remained limited, whether by government or others. Yuan Yue pioneered commercial polling in China when he set up Horizon Research, a private company, in 1992. He says reports circulated by his previous employer, the Ministry of Justice, used to state that "the people all agree"—even though no one was asked what they thought. Today, most provincial governments have a social-opinion research centre, while official news agencies run opinion-monitoring units and many university departments conduct surveys, as do commercial pollsters. Governments have opened a plethora of websites, partly to solicit feedback (see box on next page).

Opinion polls today cover a vast range of subjects. The biggest growth in demand for them is driven by the Chinese government itself, says Mr Yuan (who is a party member). The top rung of leaders rarely commissions polls, but what Mr Yuan describes as "customer satisfaction surveys" by local governments are used "very extensively", he says. These evaluate government performance on issues such as social security, public health, employment and the environment. They even assess the popularity of local leaders, although the party insists that public approval on its own is not enough to guarantee a leader's promotion.

Another type of poll has also emerged, to sample attitudes towards particular issues such as raising subway fares or increasing the price of petrol or water. Weightier matters are tested this way too, such as various aspects of China's labour laws, or whether the death penalty should be applied for corruption (73% say yes).

Greater public involvement, including through polling, has had some effect on policy. Anthony Saich of Harvard University notes that in successive polls, conduct- ▸▸

ed on his behalf by Horizon since 2003, the government's failure to tackle corruption effectively has consistently featured among respondents' main concerns. Mr Xi's sweeping anti-corruption campaign appears, at least partly, to be a response to such anxieties. Last year's declaration of a "war on pollution" by Li Keqiang similarly had public opinion in mind.

Opinion polls particularly affect policy at a local level, Mr Saich reckons. His surveys show that public satisfaction with local government is often lower than it is with the performance of central government—not surprisingly, perhaps, since local authorities provide the overwhelming bulk of public services. Approval ratings of the central government, which are (suspiciously) high by the standards of many other governments around the world, barely shifted between 2011 and 2014 (see chart). But Mr Xi still has reason to worry, as China enters what he calls the "deep water" of economic reform.

In a country so vast, populous and diverse, it is often hard to sample representatively. Internet penetration is higher in cities and among rich people, which biases online polls, while rural respondents more often refuse face-to-face interviews. National surveys sometimes exclude Tibet and Xinjiang. The opinions of the country's 300m internal migrants are hard to assess because they are on the move, often work in the grey economy and are suspicious of people they regard as government snoops. As in other countries, many people simply will not talk.

Horizon's Mr Yuan says he can ask almost anything these days, but he avoids the most politically sensitive subjects such as Falun Gong, a once widely popular quasi-Buddhist sect that the government banned in 1999, or the Tiananmen Square protests. Last year he conducted polls on attitudes toward pro-democracy protests in Hong Kong and even about the country's most senior leaders—but he is guarded about who commissioned him and what he found. Most polls for the government are not made public. That makes it harder to call the party to account, and means academics and experts sometimes cannot use the findings to advise on policy.

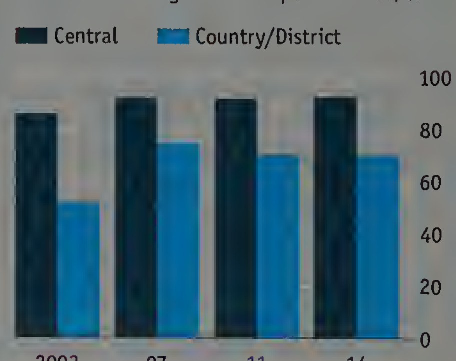
Still, the government's interpretation of opinion-poll data is becoming more sophisticated. A survey in Beijing in 1995 found that 90% of people were satisfied with the city government's performance, for example—yet some in the government, steeped in the party's traditional view that it enjoys universal public support, worried that as many as 10%, or over 1m people, were dissatisfied. The understanding of opinion-survey results has considerably improved since then, says Shen Mingming, an American-trained polling expert at Peking University who conducted the survey.

The use of polling points to a persistent feature of party rule since Deng Xiaoping launched the country's economic reforms in the late 1970s: marginal improvements in the current system are preferred over substantive political reform. However extensive the surveys, they stop well short of providing officials with the kind of feedback they need—rising numbers of protests in recent years are an indication of that. Nor does the increasing use of polls mean that the party is ready to allow a more open airing of dissent. Mr Xi has presided over increasing constraints on the press and on freedom of expression in other areas. Hundreds of activists have been rounded up. They include five women arrested last month merely, it appears, for campaigning against sexual harassment.

Such repression, along with an eagerness to canvass public sentiment, may be motivated by the same strategy: to monitor opinion so as better to control it. The party sees limited interaction between government and citizens as a way of blunting demands for a freer choice of who rules over them. The party is still afraid of the people, (the blanket security it imposes on sensitive political occasions is a sign of this). But even to report a poll, as state-run media do almost daily, gives weight to the notion that public opinion matters. It is a message that is sinking in among citizens and fuelling demands for more responsive government. "People are more and more clear about their rights and about what they can express," says Mr Shen. That is a trend the party would ignore at its peril. ■

Xi says, they say

Satisfaction with government performance, %



Source: Surveys by Anthony Saich, Harvard Kennedy School

Government websites

Zombies in the cloud

BEIJING

The government tries to spruce up its online presence

EVER since the dawn of the internet age, China's government has fretted over dangers that may lurk in the chaotic and unruly realm of cyberspace. It has worked hard to monitor citizens' internet doings, and block or filter content it does not like. Now authorities are trying to rein in internet chaos they themselves have wrought.

Officials at all levels, from central ministries to local government sub-departments, have invested billions of dollars since the 1990s in their own websites. But users seeking the latest official data or the current party line are often frustrated. Many pages have not been updated in years. Some agencies that were long ago disbanded or merged into others have left their old web pages floating around the internet like space junk. Some sites work only with certain web browsers, some do not work at all and some contain malware.

In March the central government announced plans to set things right. The first step is a review, lasting until December, of the functioning and accuracy of official websites at all levels. Dormant "zombie websites" will be shut, officials promise. State media have called for the punishment of those responsible for having failed to delete them earlier.

Some of the chaos is caused by websites that masquerade as government ones in order to steal personal information, promote property scams or even distribute pornography. Actual government sites have also been hijacked, such as that of the Anhui provincial land and resources bureau, which carried adverts for laser hair-removal and infertility treatments.

Opening new channels of communication with the public was one of the original aims of many government websites. Beijing's city government has recently pledged to respond within seven days to comments by users of its site. But the clean-up effort may also be aimed at tightening control over information that gets released. Foreign journalists have benefited from surprisingly frank reports on obscure local government websites—learning, for example, about preparations made by police for potential unrest on sensitive anniversary dates.

The review and clean-up effort, if successful, will bring welcome relief to millions of frustrated users in search of current information. But the job will be a big one. One place to start would be the website of the agency in charge of managing government domain-names. It lists the chairman of its parent organisation as "Premier Wen Jiabao". Mr Wen left office more than two years ago.

Banyan | Where all Silk Roads lead

Through a fog of hazy slogans, the contours of China's vision for Asia emerge

NOT content with both purifying the Chinese Communist Party which he heads and with reforming his country, China's president, Xi Jinping, also wants to reshape the economic and political order in Asia. With the flair that Chinese leaders share for pithy but rather bewildering encapsulations, his vision for the continent is summed up in official jargon as "One Belt, One Road". As Mr Xi describes it, most recently last month at the Boao Forum, China's tropical-beach imitation of Davos's ski slopes, the belt-road concept will "answer the call of our time for regional and global co-operation". Not everybody is convinced. Some see it as no more than an empty slogan; others as a thinly disguised Chinese plot to supplant America as Asia's predominant power. Both criticisms seem misplaced. Mr Xi is serious about the idea. And it is less a "plot" than a public manifesto.

Mr Xi first floated the idea in 2013, in Kazakhstan. He mooted a "a Silk Road economic belt" of improved infrastructure along the main strands of what, centuries ago, was the network of overland routes used by silk traders and others to carry merchandise to and from China through Central Asia and Russia to northern Europe and Venice on the Adriatic. In Indonesia, Mr Xi proposed "a 21st-century maritime Silk Road", reaching Europe by sea from cities on China's south-eastern seaboard via Vietnam, Indonesia itself, India, Sri Lanka, east Africa and the Suez Canal. At the time, the proposals sounded rather fluffy—the sort of thing travelling leaders often trot out, harking back to a distant past of supposedly harmonious exchanges.

In the past few months, however, the idea has been given a real push. China has gone further toward putting its money where Mr Xi's mouth is. It has promised $50 billion to its new Asian Infrastructure Investment Bank, which despite American opposition has sparked a race in which 47 countries have applied to join as founding shareholders. China has earmarked a further $40 billion for a "Silk Road fund", to invest in infrastructure along the land belt and the maritime road. One motive for this splurge is self-interest. Chinese firms hope to win many of the engineering projects—roads, railways, ports and pipelines—that the new "connectivity" will demand. Improved transport links will benefit Chinese exporters. And helping its neighbours' development will create new markets. That China seems to have realised this has led to comparisons with the Marshall Plan, America's aid to help western Europe rebuild after the second world war.

China does not like that analogy, since it sees the Marshall Plan as part of America's containment of the Soviet Union. It insists that its initiatives are for the benefit of all of humanity and are—favourite catchphrase—"win-win". But it certainly hopes money and investment can win friends. Yan Xuetong, a prominent Chinese international-relations expert, has argued that the country needs to "purchase" friendly relationships with its neighbours.

In Central Asia, battered by low oil prices and plummeting remittances from migrant workers in Russia, the prospect of greater Chinese involvement is welcomed. Russia itself, though wary of China's steady erosion of its influence in the former Soviet states of the region, is now too dependent on Chinese goodwill to do other than cheer. On the maritime route, however, suspicion of Chinese intentions is rife. Its arrogant behaviour in the South China Sea, where it is engaged in a construction spree to turn disputed rocks into disputed islands, has given the impression that it feels it can simply bully its smaller neighbours.

So the initial reaction in South-East Asia to the belt and road has been sceptical. In Malaysia, where the government's usual response to a proposal from China is to applaud first and ask questions later, the defence minister, Hishamuddin Hussein, has said the maritime Silk Road has "raised questions" and that it must come across as a joint (that is, regional) initiative, rather than as a solely Chinese one. Indonesia's president, Joko Widodo, who says he wants to turn his country into a "global maritime fulcrum", was doubtful at first. But he now seems inclined to help—unsurprisingly since his own plan involves massive investment in ports and other infrastructure to which, he hopes, China will contribute. A visit to China last month yielded a joint statement promising a "maritime partnership" and describing his and Mr Xi's visions as "complementary". But Mr Joko had also made clear before arriving in Beijing that Indonesia did not accept China's territorial claims in South-East Asian waters.

In India, another new leader, Narendra Modi, the prime minister, has his own approach to these issues. He visited Sri Lanka, Mauritius and the Seychelles last month, three Indian Ocean countries to which he promised greater co-operation and spelled out India's own interests as a maritime power. This was not presented as a riposte to China's plans. But in January Mr Modi and Barack Obama produced a joint "strategic vision". Implicitly, India's response to China's maritime ambitions has been to reinvigorate ties with small neighbours and to cleave closer to America.

China as number one?

Mr Modi, who will be in China next month, is unlikely to be critical of the maritime Silk Road. Like Mr Joko, he would welcome Chinese investment in infrastructure. But both of them probably have doubts about Mr Xi's vision of Asia's future—of a region with China as its hub, with Chinese-led institutions playing an ever bigger role in Asian economies, and with a fast-growing Chinese navy deploying ever more visibly far from China's shores. Mr Xi, it appears, is guided by a dream of regional hegemony, of countries such as South Korea and Japan drifting of their own will away from America's strategic orbit and into that of China, the resurgent power reclaiming what it regards as its historical birthright. This is not a plot. It is a long-term—and even credible—plan, albeit one that does little to inspire the rest of Asia. ■

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Iran nuclear deal

Too soon to celebrate

The odds of a momentous agreement have shortened, but it is no dead cert

IT IS not yet a done deal. Hardliners on both sides will do their best to sabotage it in the coming weeks. Yet the odds on Iran and six world powers striking a big nuclear deal have shortened dramatically. The announcement on April 2nd of the parameters for an agreement to limit Iran's nuclear programme (claimed by the Iranians to be peaceful), in exchange for lifting sanctions, was more detailed than expected. But several unresolved issues mean there will be much hard negotiating to be done if a deal is to be signed by the June 30th deadline.

Still, experts who had previously been sceptical about the prospect of an agreement think it is within reach. They include Gary Samore, Barack Obama's senior adviser on arms control for four years (now at the Belfer Centre at Harvard University), and Mark Fitzpatrick, a former State Department official (currently at the International Institute for Strategic Studies in London). France's foreign minister, Laurent Fabius, who had rejected an earlier version cooked up by the Americans and the Iranians (he was easily the toughest of the negotiators at the recent Lausanne talks), describes the accord as "an important first step, even very important".

So far the reaction from the Arab world's Sunni powers has been measured, even welcoming, including from Saudi Arabia, Iran's rival for regional hegemony. Even the Israeli government is now talking about how to make the deal better rather than merely denouncing it—the default position of the prime minister, Binyamin Netanyahu—although the improvements it demands would still destroy the talks.

True, the level of detail in the "fact sheet" about the deal's parameters that was released by the State Department has not been matched by Iranian statements. But then nor has it, in the main, been contradicted. On the crucial issues to do with curbing Iran's ability to produce fissile material for bomb-making, the differences are more spin than substance. The Americans note the constraints: the removal and mothballing of centrifuges from Natanz; the transformation of the Fordow enrichment facility into a research centre; the conversion or export of Iran's low-enriched uranium stockpile; and the destruction of the core of the plutonium-producing reactor at Arak. The Iranians, in turn, insist that nothing has been surrendered. "None of the nuclear facilities or related activities will be stopped, shut down, or suspended," says an Iranian summary. Elsewhere, though, the divisions are real enough.

On the lifting of sanctions imposed in response to Iran's nuclear programme—which have halved Iran's export earnings (even before the fall in oil price) and crippled the economy in other ways—the Iranians have done pretty well, albeit not as well as they claim. America's initial position had been that sanctions would come off only in stages, and would depend on Iran establishing a record of strict compliance. It now seems likely that American and European sanctions will be suspended at roughly the same time, not least because extraterritorial provisions in the American measures would otherwise expose European firms to lawsuits.

The Iranians say that "at the same time as the start of Iran's nuclear-related implementation work, all of the sanctions will be annulled on a single specified day". In other words, all sanctions would go within days of the signing of the final agreement. By contrast, America and its European co-negotiators (France, Britain and Germany) are insisting that sanctions will only be suspended after the International Atomic Energy Agency (IAEA) "has verified that Iran has taken all of its key nuclear-related steps"—ie, at the end of the first stage of implementation, not at the beginning. Lifting sanctions could take between six months and a year, according to John Kerry, America's secretary of state.

A further disagreement is over reimposing sanctions should Iran violate the terms of the accord. The Iranians bridle at the mention of it, but the principle of sanctions "snapback" is key for the West and is reflected in the careful wording of the undertakings. The EU will "terminate the implementation" of nuclear-related sanctions; America will cease their "application". While Iran can rejoice that sanctions have gone, the reality is that their architecture will remain in place. The UN sanctions are less painful in economic terms (they deal mainly with arms and technology transfers, and target individual people and firms), but trickier politically. Once lifted through a new Security Council resolution they may be well-nigh impossible to slap back on unless the Iranian violation is both severe and flagrant enough even for Russia to refrain from us-

ing its veto.

Lastly, some of the (mainly American) sanctions on Iran have nothing to do with its nuclear activities, but have accumulated over the past four decades in response to abuses of human rights, the promotion of terrorism and the country's threatening missile programme. If ordinary Iranians think that all these will disappear too, they are in for a disappointment.

On inspection arrangements, the Iranian fact-sheet is silent, beyond the commitment voluntarily to implement the "additional protocol" of the Nuclear Non-Proliferation Treaty's system of safeguards. Yet for the agreement to be credible, Iran must be willing to go even further and allow international inspectors to visit any sites deemed "suspicious", while answering the many questions the agency has asked about past and possibly continuing research on nuclear weapons.

Disagreements over verification give opponents of the deal on both sides their best chance of undermining it. If leaders of Iran's Revolutionary Guard block access to some military sites, or if there is a refusal to engage with the IAEA on the "possible military dimensions" of the programme, Mr Obama might lose the votes he needs to head off critics in Congress who want the right both to review the deal and to introduce new sanctions should agreement on all issues not be reached by the deadline of June 30th. A lot has gone right, but there is plenty that could still go wrong. ■

The war against Islamic State (1)

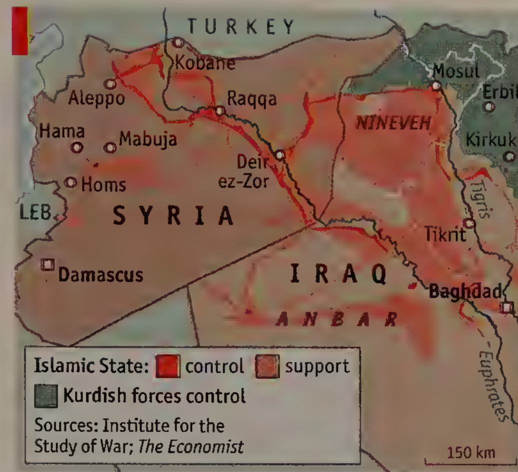
Creeping toward Damascus

CAIRO

The jihadists' advance in Syria poses difficult questions for America

LIKE a game of whack-a-mole, when the American-led coalition against Islamic State (IS) strikes the jihadists in one place, they often pop up in another. That is what happened at the start of April, when IS lost the city of Tikrit in Iraq but took over the long-suffering Yarmouk camp in Syria. A Palestinian refugee camp, now a suburb of Damascus, the capital, Yarmouk has long been held by a mixture of Palestinian and Syrian rebels, and besieged by troops loyal to Syria's president, Bashar Assad.

Until recently IS in Syria was confined mostly to the east of the country bordering Iraq. But over the past week its declaration of *wilayat*, or "provinces", in other parts of Syria have seemed less like wishful thinking. Its men have inched westward from their Syrian headquarters in Raqqa towards Mr Assad's turf. On March 31st they killed at least 46 residents of Mabuja, a village close to Hama. Then on April 1st the jihadists launched an offensive to take over Yarmouk, just 10 kilometres (6 miles) from central Damascus. Fighting continues, but IS is said to be in control of roughly four-fifths of the camp. As well as sending in its own fighters, IS found local recruits among angry young camp residents. They have been starved by the regime's troops to the point of eating leaves, but also dislike some of the rebel groups that control Yarmouk for playing politics with the regime rather than confronting it.



Sources: Institute for the Study of War; *The Economist*

Observers have long feared that IS would advance in Syria as the Western coalition's plan to "degrade and defeat" IS focused mostly on Iraq. Yet IS does not consider the two countries to be separate battlefields; it claims its "caliphate" has effaced the post-colonial borders. "IS looks for opportunities to expand that will help it strategically and generate a lot of buzz," says Noah Bonsey, Syria analyst at the International Crisis Group, a Brussels think-tank. As IS has struggled to make further gains in northern Syria—Kurdish fighters pushed it out of Kobane with the help of American bombing—southern Syria is the natural place to seek gains.

The new IS tactics expose the latent contradiction in America's strategy. In Iraq its coalition has uneasy partners on the ground in the form of the Iraqi government and the Iranian-backed Shia militias (see next article). In Syria, its plans to support mainstream rebels have not come to much; America is opposed both to IS and to the Assad regime. Iran, by contrast, supports both the Iraqi and Syrian governments, helping form local militias to support them and sending fighters from Hizbullah, its Lebanese client.

Syria's rebels in the south are better equipped and less extreme than their northern peers, but even they are receiving only limited help from American and Arab states. For now, it is Mr Assad who is bombing IS in Yarmouk. In a perverse but characteristic contortion, he is claiming to defend the same 18,000 people whom he has besieged for the past two years.

As the jihadist problem has spread, some Arab states appear to be warming to Mr Assad as the lesser evil. On April 2nd Tunisia, which last month suffered an attack at its Bardo museum that killed 22 people, announced that it would reopen its consulate in Damascus. Ostensibly, it is to track Tunisian jihadists in Syria, but officials have invited the Syrian ambassador back to Tunis. Abdel-Fattah al-Sisi, Egypt's president, is also far warmer toward Mr Assad than his predecessor, Muhammad Morsi. Yet the Syrian president is losing strength and relying ever more on Hizbullah and other militias backed by Iran.

Some think Saudi Arabia, which is leading a ten-country offensive in Yemen, may yet do more to push Mr Assad out. Arab media speculate that the "Yemen model" could be applied to Syria. In an interview with the *New York Times*, Barack Obama appeared to call for just that: "Why is it that we can't have Arabs fighting the terrible human-rights abuses that have been perpetrated, or fighting against what Assad has done?" Direct Arab action is unlikely in Syria, but it could get much messier yet. ■

The war against Islamic State (2)

Mosul beckons

BAGHDAD AND BASHIQA

It will not be easy to retake Iraq's second city

IN A barren military camp near Mosul in Iraq, 500 balaclava-clad men train for urban warfare under the watchful eye of their leader, a former general in Saddam Hussein's army. They are among 4,000 volunteers for the National Mobilisation Unit, a multi-ethnic force being assembled by Atheel al-Nujaifi, the governor of Mosul's Nineveh province.

The men are preparing to be deployed to keep the peace in Mosul, if and when Iraq's second city is retaken from Islamic State (IS). They would replace the police and military forces that melted away in the face of the jihadists' onslaught last June. A combination of Iraqi soldiers, mainly Iranian-backed Shia militiamen and American air power recaptured Tikrit on March 31st. Now Mosul beckons.

Yet the fight there will be far harder. Mosul is a city of 2m people compared with some 300,000 in Tikrit, which took weeks to retake (there are still some IS pockets). Mosul is the Iraqi base of IS, which was present there long before it took the city.

It is still unclear who will try to recapture the place. Mr Nujaifi rejects any notion of a Shia-led intervention in the city. In Tikrit, Shia militias had to be pulled out after looting and revenge attacks on Sunni residents; last year hundreds of Shia soldiers were executed, and their bodies are now ▸▸

Planting the Iraqi flag in Tikrit. But too many fight only for their sect

being exhumed. Haider al-Abadi, Iraq's prime minister, said that the Hashid al-Shaabi, the umbrella-group for Shia militias, will not be sent to fight in Mosul.

Mistrust between Sunni Arabs and Iraq's mainly Shia security forces runs especially deep in Mosul. Unlike other Iraqi cities that are more ethnically and religiously uniform, Mosul is home to myriad communities. Sunni Arabs, Shias, Kurds, Christians and Yazidis have all registered for Mr Nujaifi's force. But Mosul also has a hard Sunni core, partly fuelled by disgruntled former officers under Saddam who bore the brunt of de-Baathification policy after America toppled Saddam in 2003. Iraqis call the place "the city of a million soldiers". Some of them joined IS.

On April 6th the Kurdish president, Masoud Barzani, said his fighters, known as Peshmerga, would assist in the campaign to retake Mosul. But officials say they are likely only to provide support, not enter the city. So the task will most likely fall to the Iraqi army, which is still being rebuilt after last June's debacle. "American command and co-ordination will be the key factor if Mosul is to be retaken," says Michael Stephens of RUSI, a think-tank. Iran may not be happy about that.

Mr Nujaifi says the government pays his men salaries of about $700 a month, but it has not sent them any arms. He uses his own money to buy guns on the black market. Officials in Baghdad cite a shortage of weapons, somewhat implausibly. Sunni officials, and some diplomats, say the delay may be due at least in part to the Shia leanings of the government. Many ministers mistrust the Sunnis, and the most extreme Shia militiamen label them all as IS. This all suggests that the battle for Mosul is unlikely to happen this spring. Lesser targets in Anbar province to the west of Tikrit may come first. Some Iraqis even suggest Mosul should just be left to IS.

The National Mobilisation Unit is a reminder of what Iraq's security forces are supposed to be. As they train, the recruits sing Arabic and Kurdish ditties about a united Iraqi force waging war against IS. "We believe in a national feeling," says a 19-year-old, amid raucous shouts of "Long live Iraq!" The display of pride rooted in national identity rather than sectarianism sets the unit apart from most of Iraq's militias. Sadly its fighters are still too few, and too weak, to make a difference. ■

Libya's civil war

An oily mess

CAIRO

As negotiations fail to progress, one side tries to grab the oil revenue

MORE blood was spilled in Libya's civil war on April 5th, when a suicide-bomber from Islamic State (IS) killed at least six people in the coastal city of Misrata and when the internationally recognised government in Beida in the east struck its opponents near Tripoli in the west. But the boldest move of the weekend caused no bloodshed. On April 4th the Beida government made a grab for the country's cash by directing the state-run oil company, the National Oil Corporation (NOC), to send its income not to the central bank in Tripoli but to the government's own offshore account.

Libya's oil output is down to some 500,000 barrels a day, from as much as 1.7m at its peak (see chart). Even so, its sales are the only thing keeping the country afloat. The revenue is being fought over by both sides in the conflict, which has split the country between two rival governments—the one in Beida, the other in Tripoli—and their allied militias. The NOC and the central bank, both in Tripoli, have somehow preserved their independence, but at a cost. The bank has used the oil money to pay consumer subsidies and the salaries of government workers across Libya, thereby funding each side's war.

Few expect the NOC's revenue to end up in the coffers of the Beida government, which has tried to get hold of the cash before by setting up a parallel outfit at Ras Lanuf, an oil hub it controls, and installing a rival chairman of the bank. Both efforts failed. Western companies buy the bulk of the country's oil and have little interest in changing contracts that are paid into central-bank accounts. Moreover, the Beida government has little ability to pay salaries, as the database of government workers is in Tripoli. "Even if they do get the money, there's no way to deliver it," says Mattia Toaldo of the European Council on Foreign Relations, a think-tank in London.

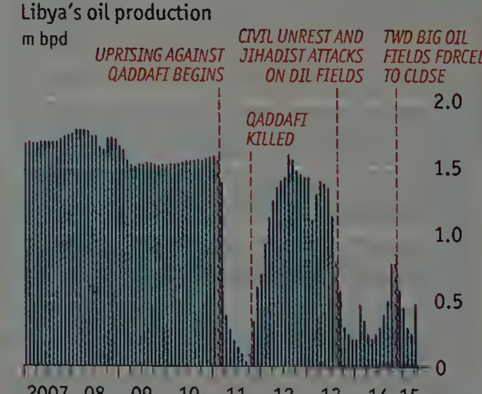
More than anything, many think, the move is a sign of the Beida government's increasing intransigence, which has soured efforts by the UN to negotiate an end to the conflict and focus the fight on IS. During peace talks last month Khalifa Haftar, a general allied to the Beida administration, ordered an air attack on Tripoli. General Haftar has received support from Egypt and the United Arab Emirates, which see Libya as a front in a war against Islamists (they are part of the alliance supporting the Tripoli government). But Western powers fear his war on "terrorists" is really an attempt to seize personal power. So although they recognise the Beida government, they have refused to enable its control of the country's finances.

The two sides appear to be fragmenting. General Haftar has fallen out with former allies. Mr Toaldo says the militias' chains of command are loosening. With IS added to the mix it is no longer clear who is fighting whom. A peace settlement seems ever harder to reach.

Government workers, at least, are still being paid. But for how much longer? The deficit this year is expected to be about two-thirds of GDP, and the country's reserves are running low. Winning control of Libya's finances may not be worth the trouble. ■

The dwindling prize

Libya's oil production



Source: Bloomberg

Nigerian politics

Please don't expect miracles

LAGOS

The president-elect faces enormous tasks, starting with halting corruption

MUHAMMADU BUHARI is fast learning what excessive expectations can do. The former military ruler, who last month handsomely beat the incumbent, Goodluck Jonathan, in a presidential election, promised frustrated Nigerians that he would bring change once he is inaugurated on May 29th. Many will take him at his word. "Most people are expecting a new Nigeria," says Ahmad Lamido, a civil servant in the northern city of Kano, celebrating the first-ever victory of a Nigerian opposition party at the ballot box. "The only person who can bring this is Buhari."

Precisely how his All Progressives Congress (APC) will reshape the country, as oil prices and government revenues slump, is still unclear. The APC's main campaign promises were to beat an insurgency in the north-east that has claimed at least 15,000 lives, and to end corruption.

Mr Buhari will start by trying to deal with mismanagement in the army. Embezzlement by generals is one reason why, despite a huge budget, the army lacks the equipment to defeat the jihadists of Boko Haram. Some generals' heads may roll.

Stopping government funds being siphoned off is a monumental task. Theft of public funds and poor government are the banes of Africa's biggest economy and largest oil producer. Though the APC includes reformers, it is also full of veteran politicians used to taking their cut.

Nonetheless, Mr Buhari's new lot will look into the accounts of the Nigerian National Petroleum Corporation (NNPC). Investigation into opaque operating contracts is the starting place, reckons Thomas Hansen of Control Risks, a London-based consultancy. The state-owned oil giant signed operating contracts worth billions of dollars without bidding during Mr Jonathan's presidency. Such "strategic partnership agreements" have been a way to steal cash from federal coffers, says Lamido Sanusi, a former central-bank governor sacked by Mr Jonathan for alleging that $20 billion in oil revenue had vanished.

Opaque "swap" deals, whereby crude exports are exchanged for refined petroleum brought back into the country, may also come under scrutiny. In 2014, monitors from the Nigerian Extractive Industries Transparency Initiative, set up in 2004 to eye deals in oil, gas and mining, said the country could be losing $8 billion a year thanks to agreements between the NNPC and various traders.

At the same time, Mr Buhari must keep the current fragile peace in the oil-producing Niger delta. He is expected to axe an expensive deal which, since 2009, has paid former militants to stop them blowing up oil installations and kidnapping workers. "Nigeria cannot afford the amnesty to the degree it did in the past," says a Western diplomat in Abuja, the capital. The new government may come up with another deal instead. But former generals who were enriched on Mr Jonathan's watch could stoke violence if they feel aggrieved. So could the delta's desperately poor young men. On April 3rd a major gas pipeline was blown up.

Yet so far so quiet in the region—though some former fighters said they would go to war if Mr Jonathan lost. Investors sound reassured by the smooth transition (about 800 people died after the last election). The stockmarket has had its longest rally in two years. Mr Jonathan deserves credit for accepting defeat graciously, which has helped stave off the threat of mass violence. He may, in any case, be happy to see the back of his job. At an Easter church service, he likened his years as a state governor and then as vice-president and president to living "in a cage". Now it is Mr Buhari who is trapped, with Nigerians watching his every move. Little wonder the new president wants to lower expectations. "How," he asks, "can I promise miracles?" ■

Urban regeneration

Polishing the city of gold

JOHANNESBURG

As badlands get cleaned up, the poor still get pushed to the margins

CENTRAL Johannesburg's newest draw for hipsters was once a mining-explosives warehouse, a relic of the city's gold rush, with part of the building believed to predate the Boer war of 1899-1902. It stood derelict for years. Now it is TheSheds@1Fox, a cavernous hall of vendors selling craft beer, flambéed chorizo and artisanal tacos, attracting trendsetters and young families to a block that not long ago was best avoided.

This is the latest example of developers bringing fresh life to pockets of South Africa's economic capital, for years saddled with a largely deserved reputation for crime and chaos. The gentrification of small sections of inner-city Johannesburg is generally welcome. There is nothing romantic about the decay of the past two decades. As apartheid waned, white middle-class residents fled to the northern suburbs and companies shifted their headquarters. Hard-up black migrants previously relegated to the margins moved into the abandoned buildings, seeking opportunities in the City of Gold. Johannesburg became a fearsome place of filthy streets, a horrendous crime rate and the phenomenon of criminals "hijacking" buildings from their owners and forcibly collecting rent from poor tenants.

The city is slowly changing from dangerous to pleasantly thrilling. Young creative types of all ethnicities have been drawn to such areas as Braamfontein and Maboneng, where refurbished buildings offer downtown living at reasonable rents. The Rough Guides travel book named Johannesburg—not its rival, Cape Town—as the must-visit city of 2015.

This first wave of gentrification, accompanied by good security, is still tentative, however. Although crime is falling, it is still high, as elsewhere in South Africa. A Starbucks coffee shop has yet to pop up. A recent violent protest in the Jeppestown area of Johannesburg exposed the residual cracks. Poor residents facing eviction by private developers turned their anger on nearby Maboneng ("Place of Light" in the Sotho language), an area that has been redeveloped into loft apartments, a boutique hotel and an art-house cinema. "We want to eat sushi in Maboneng," the protesters chanted, burning tyres and throwing rocks, before being dispersed by police firing rubber bullets.

Maboneng's developers were not to blame for the evictions; they became a target because of their success. Yet the destitute still fear they will be sidelined and packed off as the city regenerates. Nonetheless, there is now a sushi restaurant in Maboneng. It is called "The Blackanese," and it is owned by a black entrepreneur who was once a security guard for cars.

An atrocity in Kenya

Could things get worse?

NAIROBI

Mass murder by terrorists exposes a host of defects in the ruling establishment

DAISY ONYANGO hid from the gunmen for 12 hours as they went from dormitory to dormitory at Garissa University, killing her fellow students by the score. From a window she could spot Kenyan soldiers. When, she asked herself, would they be coming to save her?

As dusk fell that day, April 2nd, they finally stormed the residence. Within minutes, they had shot dead the students' tormentors. Apparently only four-strong, they were members of the Shabab, a fanatical Islamist group that seeks to rule over Somalia and has terrorised neighbouring Kenya. It justifies its carnage on the ground that the Kenyan government has been fighting it in Somalia.

Garissa is a dusty little town in a poor ethnic-Somali area 145 kilometres (90 miles) from Kenya's border with Somalia. Most of the students at the new university are, like the 20-year-old Ms Onyango, from other parts of the country.

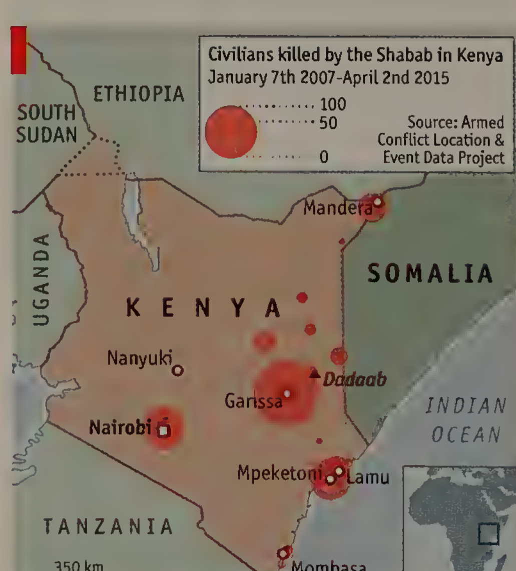
For the whole day, she and others had listened to the gunmen goading and giggling as they tortured and slaughtered her classmates, telling them that the Shabab's mission was to "kill and be killed". With time on their hands, they discussed where the Kenyan soldiers might be positioning themselves. Meanwhile, they tested the students' knowledge of the Koran, killing those who failed. Some students had their throats slit. Others were shot. A few were reported to have been beheaded. Female students were tricked out of their hiding places by the gunmen's assurance that the Koran forbids the killing of women. Some victims, before being killed, were made to call their parents to blame their death on Kenya's government for policies that have supposedly led to the killing of Somalis and Muslims.

By the end of the day 142 students lay dead, along with six policemen and soldiers, plus the Shabab's quartet. Along with al-Qaeda's bombing in 1998 of the American embassy in Nairobi, when 213 people were killed, it was one of the bloodiest atrocities in Kenya since independence in 1963. President Uhuru Kenyatta called for three days of mourning—and swore vengeance on the killers. He dispatched aircraft to bomb two Shabab camps in Somalia. So far five Kenyans and a Tanzanian have been arrested on suspicion of involvement in the Garissa attack. Kenya's central bank governor suspended the licences of 13 Somali remittance firms operating in Kenya and froze the accounts of more than 80 individuals and entities suspected of financing terrorism.

Islamist assaults on Kenya have been mounting since 2011, when its government sent troops into Somalia to fight the Shabab, which proclaimed its allegiance to al-Qaeda in 2012 and still controls swathes of the country in the centre and south despite being pushed out of the main towns. Since Mr Kenyatta became president in 2012, the group has killed more than 400 people in Kenya. In September 2013 it butchered at least 67 in Nairobi's upmarket Westgate shopping mall. In June last year it slaughtered 60 in the town of Mpeketoni, near the island of Lamu. In November and December it murdered 36 labourers in a quarry and 28 people whom it hauled off a bus. Both those atrocities were carried out near Mandera, in Kenya's far north-east. In all such incidents, the Shabab let off Muslims and killed the rest.

Criticism of the government's tardy and incompetent response to the slaughter in Garissa has welled up fast. A spokesman for the interior ministry insisted it was "not as bad" as during the Westgate fiasco, when security forces took four days to defeat four terrorists—and, by the by, looted the mall.

Yet Nairobi-based journalists who jumped in their cars were on the scene in Garissa hours before Kenya's General Service Unit, a supposedly elite force based near Nairobi. It took seven hours to deploy and ten before it stormed the campus. Police and soldiers based near Garissa just looked on. Moreover, despite warnings that the university might be attacked, only two guards had been deployed to protect the students.



Pray for the dead of Garissa

The day before the attack, Mr Kenyatta had lambasted the British government for warning its citizens against travel to certain parts of Kenya, with Garissa mentioned. After the Westgate attack he had been loth to sack any of the ministers or generals in charge of security, though eventually a few heads did roll. This time he may be expected to crack the whip more fiercely.

A particular worry is that the appeal of Islamist violence is spreading beyond the extremists among Kenya's 2m-plus Somalis into disgruntled sections of Kenya's Muslim community at large, especially in the coastal region that caters to many tourists. The Garissa attack was launched the day after the anniversary of the assassination of a prominent pro-jihadist cleric in Mombasa, Kenya's main port, known as Makaburi. Many young Muslims on the coast fear they will be targeted by the authorities in the wake of the Garissa outrage. In recent years they have accused the government's counter-terrorism units of extrajudicial killings, disappearances and arbitrary detentions.

In poor areas such as Garissa they also accuse Kenyans from inland, including members of Mr Kenyatta's Kikuyu tribe, the country's richest, of taking their land for development. A railway and pipeline from Lamu towards prospective oil wells in north-west Kenya, Uganda, South Sudan and Ethiopia would run close to Garissa. Mr Kenyatta's government is anyway facing an unusually fierce wave of criticism across the country as a result of a probe into grand-scale corruption that benefited members of the ruling elite. If it fails to deal with the Shabab and its home-grown allies better than before, popular discontent could rise alarmingly. ■

Also in this section

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Reforming Italy's government

Working on it

ROME

Italy is busily pushing through reforms, but the biggest ones will take years to complete

WHEN Matteo Renzi, Italy's prime minister, came to power in February 2014, he promised to push through a daunting list of reforms at the breathtaking speed of one a month. Those who knew Italy well were sceptical, and indeed Mr Renzi has not kept to his schedule. Nonetheless, when he meets Barack Obama in Washington next week, Mr Renzi's economic and political position will be stronger than at any time since he took office.

Italy appears to be emerging from a recession that has lasted for more than three years—its longest on record. Falling oil prices, the European Central Bank's quantitative easing and a weaker euro are all doing their bit. Even the opening in Milan of the latest world expo on May 1st should boost GDP. Mr Renzi has pencilled in growth for this year of 0.7%.

Some of his advisers think that will prove an underestimate. They argue that reforms Mr Renzi has undertaken over the past 14 months are starting to have an effect. These include enhanced access to credit for small firms, a cut in a much-criticised regional tax on company turnover, fiscal incentives for employers in a new labour reform and an €80 ($87) monthly cut in the tax bill of lower-paid workers.

Politically, Mr Renzi stands tall on a battlefield littered with his vanquished enemies—and humiliated allies. Abrupt turning points are characteristic of Mediterranean politics, based on patronage. When a politician demonstrates conclusively that he is the one in charge, his former enemies often switch allegiances. In retrospect, it is clear that such a turning point occurred on January 31st, when Mr Renzi succeeded in pushing his choice for president, Sergio Mattarella, through Italy's electoral college.

Mr Mattarella appealed to the whole of Mr Renzi's routinely fractious centre-left Democratic Party (PD). But he was unacceptable to Silvio Berlusconi, the leader of the biggest conservative party in parliament. Having provided Mr Renzi with crucial support for constitutional and political reform, the former prime minister had expected a say in choosing the new head of state. By ignoring him, Mr Renzi made it clear that he could outwit Mr Berlusconi and even dispense with his help.

Slow progress

Matteo Renzi's promised reforms and where they stand, February 2014 to April 2015

Reform	Status
Constitutional	Going through parliament (slowly). Will probably need a referendum
New electoral law	Nearing approval
Labour	Being implemented
Public administration	Stuck in parliament
Repayment of public sector debts to private sector firms	In progress
Help to SMEs	Some measures enacted, with more to come
Overhaul of tax system	In early stages
Civil justice	Preliminary steps taken, but still a long way to go

Source: *The Economist*

On April 2nd Mr Renzi dished out a similarly humbling rebuff to his coalition ally, Angelino Alfano, the leader of the New Centre Right (NCD). After one of the NCD's three ministers resigned over allegations of corruption, the prime minister replaced him with a member of the PD. Mr Alfano, whose party's share in the polls has dwindled to only about 3%, had no appetite for torpedoing the government and risking an election.

The PD by contrast is polling at about 38%, and its opponents are in disarray. Mr Berlusconi's support for the government cost him a split in his Forza Italia party, which now trails a resurgent, more radically right-wing Northern League. Neither movement is within 20 percentage points of the centre-left.

What could go wrong for Mr Renzi? For a start, the economy remains fragile. Unemployment rose slightly from January to February. The debt-to-GDP ratio continues to grow. The finance minister, Pier Carlo Padoan, says it will peak this year at 132.5%. But his predecessors have been predicting a peak for ten years. In fact the ratio has fallen only once, in 2008, largely because Italy's prime ministers hesitate to make cuts.

If Italy fails to trim its deficit in line with the programme agreed on with the European Commission, it must increase value-added tax by €16 billion next year—a move that officials estimate would shrink the economy by 0.7%. To avoid that, the cabinet this week agreed to reduce spending by €10 billion. But experience shows that in Italy cuts of that magnitude are hard to achieve. Mr Renzi will probably seek a ▸▸

trade-off with the EC: a budget deficit in 2016 of perhaps 2.2% (against a currently projected 1.8%) in return for evidence of structural reform.

Mr Renzi's record on reforms has been mixed but encouraging (see chart on previous page). The government faces obstacles including a tortuous legislative process and administrative inertia. ("So far, I have not met a director-general under the age of 50," says a prime-ministerial adviser. "You cannot imagine how much resistance that creates for a reforming government.")

But a third obstacle is of Mr Renzi's own making. He believes Italy cannot truly change until it has a government with a solid parliamentary majority, certain of staying in power for an entire legislative term. To that end, he has given priority to constitutional reform and a new electoral law. But how long will Italians, and their European partners, have to wait for this paradise of institutional stability?

Mr Renzi's constitutional reform can only be passed after being bounced between Parliament's two chambers until an identical text has been approved twice by each chamber in votes at least three months apart. That alone will take until next year. Unless the bill wins majorities of two-thirds in both houses on the second vote, it will need to be put to a referendum. And by alienating Mr Berlusconi, the prime minister has forgone his already slim hopes of avoiding a time-consuming nationwide vote. Heaven, then, will have to wait until at least 2017. ■

Turkish politics

Taken hostage

ANKARA

A kidnapping becomes a pretext for a crackdown on social media

Another successful operation

ON MARCH 31st two members of DHKP-C, a Marxist revolutionary group, strolled into Istanbul's main courthouse disguised as lawyers and armed with guns and hand grenades, and took a prosecutor hostage. Hours later the prime minister, Ahmet Davutoglu, boasted that security forces had conducted a "successful" operation, killing both gunmen. No matter that the prosecutor, Mehmet Selim Kiraz, had been killed too. Three days later 166 websites, including Twitter, Facebook and YouTube, were blocked for publishing images of Mr Kiraz held at gunpoint by his killers. Only when they complied with a court order to remove the pictures did they come back online.

Such crackdowns have become routine under Recep Tayyip Erdogan, the Islamist president, who calls social media "the worst menace to society". He sometimes claims social media are being manipulated by an unnamed global "mastermind" trying to overthrow him and his Justice and Development (AK) party. A foreign diplomat in Ankara, the capital, says Mr Erdogan is creating imaginary enemies to stoke artificial crises and justify repression.

At the top of Mr Erdogan's list of foes is Fethullah Gulen, a Sunni cleric based in Pennsylvania with whom he once made common cause against army tutelage in the early days of AK rule. He has since patched things up with the generals, and now claims Mr Gulen's followers in the security forces and judiciary fabricated evidence for an alleged coup plot, known as Sledgehammer. (Coincidentally, on the same day that Mr Kiraz was being taken hostage, all 236 suspects in the plot, most of them army officers, were acquitted.)

Mr Erdogan has aired similar claims about a corruption probe into his inner circle, revealed in December 2013. Thousands of alleged "crypto-Gulenist" public servants accused of establishing a "parallel state within a state" have been sacked or demoted. More than 70 people have been investigated or convicted for "insulting" Mr Erdogan since he became Turkey's first popularly elected president last August.

Reforms passed by AK during its first two terms in power, from 2002 to 2011, are being rolled back. A new security bill permits police to shoot at demonstrators and detain suspects for up to 48 hours without a court order. It also increases internet censorship. If Mr Erdogan succeeds in attempts to rewrite the constitution to give himself what he calls a "Turkish-style" executive presidency, it would concentrate power in his hands. Then, says Kadri Gursel, a prominent critic, "Turkey will slide into a one-man dictatorship".

To push through constitutional change, AK must win at least two-thirds of the seats in parliamentary elections on June 7th. Whether it will is not clear. The main opposition, the secular Republican People's Party (CHP), is unlikely to gain much. But the pro-Kurdish Peoples' Democracy Party may reach the 10% vote share needed to take seats in parliament. AK's list of candidates includes Mr Erdogan's son-in-law, Berat Albayrak, who has previously worked for a pro-AK conglomerate, Calik. Other protégés are also running for safe seats. But Mr Davutoglu's influence is palpable as well. This suggests that Mr Erdogan's grip over AK may be loosening.

A silent power struggle between president and prime minister was evident when they clashed over the conduct of peace talks with Abdullah Ocalan, the imprisoned leader of Turkey's autonomy-seeking Kurds. Mr Erdogan wants to link any concessions towards Kurds to backing for his executive presidency. Mr Davutoglu, AK insiders say, wants the issues to remain separate because he too wants to keep Mr Erdogan's power in check.

Many worry that Mr Erdogan's obsession with an executive presidency could drive him to new extremes. In the past he has invoked sectarianism by targeting the Alevis, who practise a liberal form of Shia Islam, to shore up AK's Sunni base. His recent diatribes against Iranian and Shia influence suggest he may resort to such tactics again. "No other leader has used religion to polarise the public in this way," says Levent Gultekin, a pundit and former Islamist. Who knows what other illiberal measures he might consider acceptable? ■

Poland's election

Echoing crash

WARSAW

Presidential elections are still scarred by the Smolensk disaster

ON APRIL 10th Poland marks the fifth anniversary of the plane crash in Smolensk in Russia that killed its president, Lech Kaczynski. Unexpectedly, the crash is back at the centre of Polish politics. This week transcripts emerged of cockpit recordings of senior officials pressing the plane's pilots to land despite dangerous conditions. The right-wing opposition Law and Justice party (PIS), led by the late president's twin brother, Jaroslaw Kaczynski, was put in an awkward spot by the transcripts, which stir up some of its supporters' old conspiracy theories about Russian responsibility for the crash. Presidential elections are due on May 10th, and PIS had hoped that anti-Russian sentiment, along with the government's unpopularity, would help it to victory. Instead PIS, which has not won a national race since 2005, is

behind in the polls and struggling to moderate its religious-nationalist image.

The favourite in the race is the current president, Bronislaw Komorowski, who succeeded Lech Kaczynski. He is backed by the centre-right Civic Platform party, which has held power since 2007. Mr Komorowski has framed the election as a contest between a "rational Poland in the heart of united Europe" and a "radical Poland…on Europe's peripheries", a reference to PiS's history of xenophobic (and specifically anti-German) rhetoric. For its part, PiS has reached out to educated voters by nominating Andrzej Duda, a 42-year-old moderate conservative who serves as a member of the European Parliament. Mr Duda will not be speaking at the party's annual commemoration of the Smolensk disaster in Warsaw this week, precisely to avoid association with PiS's more radical supporters and their conspiracy theories.

Mr Duda has kept the spotlight on economic topics, particularly the euro, which Poland is committed to adopting but which PiS (and about half of voters) oppose. For a campaign stunt last month he travelled to neighbouring Slovakia, which adopted the euro in 2009, to show that groceries are more expensive there. Yet the war in Ukraine has made national security the top concern of voters, according to polls. This benefits Mr Komorowski, who is Poland's most trusted politician. With over 40% support in opinion polls, he remains well ahead of Mr Duda, whose ratings have risen but remain below 30%.

Yet Mr Komorowski's high ratings do not carry over to Civic Platform. With parliamentary elections due in the autumn, some polls put the two parties neck-and-neck. Ewa Kopacz, the Civic Platform prime minister, has faced strikes by coal miners angry at government reforms. She has struggled to fill the shoes of her predecessor, Donald Tusk, who left in September to become president of the European Council. She has tried to pick up support by embracing socially liberal issues, for instance by ratifying an international treaty on violence against women. There is room to Civic Platform's left: the struggling Democratic Left Alliance, the party descended from the former communists, are polling under 10%.

Meanwhile, while the Smolensk crash strengthened voters' emotional bond with Mr Kaczynski, some PiS supporters believe his time is up. The atmosphere inside the party is like a "besieged fortress", says Andrzej Nowak, a historian discussed as a possible PiS presidential candidate last year. Mr Nowak caused a stir in February by suggesting that Mr Kaczynski, who is 65, is too old to lead the party. In the end, Smolensk did not change Polish politics much, says Rafal Chwedoruk at Warsaw University: "It just deepened the rift." ■

Eastern Ukraine

In the fold

KHARKIV

Ukraine's second city shows no risk of rebelling, but it is far from secure

AFTER Viktor Yanukovych, who was then president, fled Ukraine in February 2014, Russian flags began appearing around the Lenin statue in Kharkiv, Ukraine's second-largest city. Pro-Russian activists clashed with supporters of the Maidan revolution, and some spoke of a "Kharkiv People's Republic". But while separatism caught fire in Donetsk and Luhansk, it faltered in Kharkiv. Ukrainian nationalists felled the Lenin statue last autumn, leaving only a shoe. Sergei Yangolenko, commander of the Kharkiv-1 national-guard battalion, says the days when the city might have joined the rebels are over. He keeps Lenin's giant ear in his office as a trophy.

Nonetheless, Kharkiv, just 40km (25 miles) from the Russian border, remains tense. Dozens of bombings in recent months have unsettled the city. Ukrainian authorities say the attacks are part of a Russian terror campaign. The leader of the Donetsk People's Republic has threatened to come for Kharkiv, where, he says, supporters "are waiting for us". The governor, Ihor Rainin, says he spends three-quarters of his time on security issues.

In late February a blast at a parade commemorating the Maidan anniversary left four dead. The following week two landmines blew up a local battalion commander's car, landing him and his wife in hospital. They consider themselves lucky. "We should be cut in half, two corpses," says the commander, Andrei Yangolenko, who is Sergei Yangolenko's brother. Other targets have included military installations, infrastructure, volunteer offices and even a bar popular with pro-Ukrainian activists. The latest bomb hit a memorial on Tuesday. A Russian suspected of organising the bombing was arrested.

Many in Kharkiv favour closer ties with Russia, but few support separatism, says Pavel Tishenko, the leader of a pro-Russian labour group. The brutality of the war in the Donbas has shattered any illusions of a peaceful break-up. The local security services have arrested 700 people accused of being pro-Russian operatives. The leaders of Kharkiv's anti-Maidan movement last spring have taken refuge in Russia. A group calling itself the "Kharkiv Partisans", based across the border in Belgorod, has been tied to the recent bombings.

Meanwhile a separate battle is under way between Ukraine's central government and Kharkiv's mayor, Gennady Kernes, a former ally of Mr Yanukovych. Mr Kernes played both sides of Kharkiv's divide a year ago. He barely survived an assassination attempt that has left him in a wheelchair. Mr Kernes insists that Kharkiv is a Ukrainian city, yet he refuses to call Russia an "aggressor nation", the Ukrainian government's official term. Ukraine's general prosecutor has opened a case against Mr Kernes for kidnapping and torturing pro-Maidan activists, charges which Mr Kernes says are politically motivated. Ukraine's interior minister, Arsen Avakov, also hails from Kharkiv and is a longtime rival. Nonetheless, Mr Kernes plans to run for re-election this autumn. He will get support from voters longing for stability. If he is convicted, it could upend the city's fragile equilibrium.

The biggest challenges for Kharkiv are economic ones. Serhiy Zhadan, a local activist and writer, says financial insecurity worries people more than terrorism does. As elsewhere in Ukraine's economy, Kharkiv's big enterprises are built to trade with Russia. Reorienting them would require capital investment that is difficult to attract in a country at war. Lower quality combined with proximity make Kharkiv's products more competitive in Russia than in the European Union. As business with Russia has contracted, Kharkiv has been hit especially hard: exports fell by two-fifths last year. Frustration with the new government is mounting.

Ukraine's economic pain creates openings for pro-Russian political parties. Neither Mr Yanukovych's Party of Regions nor its voter base has disappeared entirely. In last year's parliamentary elections, the Party of Regions' rebranded successor, the Opposition Bloc, carried most of the eastern regions, including Kharkiv. National polling data now show the Opposition Bloc outpacing the People's Front party of Arseniy Yatsenyuk, the prime minister, which won last year's elections and has borne the blame for the country's continuing economic woes. President Petro Poroshenko's party finishes first in those same polls. But most voters are undecided. So too is Kharkiv's future. ■

Greece and Russia

Desperate times

ATHENS

A Greek gets no gifts in Moscow

IT HAS been five years since a Greek prime minister last visited Moscow in search of a handout. On that occasion, Dmitry Medvedev, then Russia's president, bluntly told George Papandreou to go to the International Monetary Fund for help (which he did). Before setting out from Athens on April 8th, Alexis Tsipras swore that he would not be asking Vladimir Putin, the current president, for cash, even though his country's finances are in a more parlous state now than they were in 2010.

In the end, the two leaders' meeting produced little beyond a warm atmosphere and pledges to "restart and revive" relations. Mr Tsipras welcomed a proposed Russian gas pipeline across Greece's territory and criticised European Union sanctions, as he has before. Mr Putin pledged (not entirely credibly) to refrain from using relations with Greece to divide the EU.

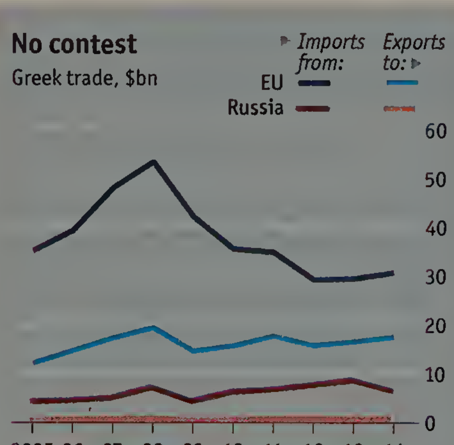
To observers in Athens, Mr Tsipras's trip to Moscow was the most striking example to date of the gesture politics that the Greek government, led by the far-left Syriza party, has used to keep its approval ratings high as unemployment edges back up, banks freeze lending and Greece slips back into recession. It came as both Greeks and Russians were celebrating Holy Week ahead of Orthodox Easter, a moment when religious and cultural affinities resonate. They will be officially strengthened in 2016 with a year-long cycle of festivities promoted by Russian and Greek cultural organisations.

For Mr Putin, rapprochement with Greece is mostly about gas. "Nothing has really changed since the mid-2000s," says a former Greek energy minister, recalling the Russian leader's pledge to turn Greece into a natural-gas hub if it signed up to the South Stream pipeline project then being touted by Russia's state-owned energy giant, Gazprom. That pipeline would have shipped gas across the Black Sea and through the Balkans to central Europe. South Stream was abandoned last year following EU pressure on Bulgaria. Now Greece has an opportunity to join Turkish Stream, its successor, which would cross western Turkey before passing through Greece, Macedonia, Serbia and Hungary.

Russian state-owned transport companies want to acquire the Greek state railway and the northern port of Thessaloniki as a package deal. But their proposal was rejected by Taiped, the Greek agency for privatising state assets, during the previous administration. Chinese firms are also interested. Cosco, a Chinese shipping giant, already controls a container terminal at Piraeus, Greece's largest port, and is transporting goods from it by special train to central Europe.

Mr Tsipras's trip may soothe his party's hard-left faction, which includes former Communist Party members who are critical of new bail-out talks with the EU and the IMF. But his government's priority is to reach a deal with creditors to unlock €7.2 billion ($7.8 billion) of loans and avoid default. Greece managed to scrape together its €458m repayment to the IMF on April 9th, but another €950m comes due in May. For the second month in a row the finance ministry is scrambling for cash to pay pensions and salaries. It is raiding unspent EU funds, to the dismay of Greek firms working on motorway projects they fear could soon be stalled. Amid the funding crunch, Mr Tsipras's dreams of Russian investment will quickly fade. ■

No contest
Greek trade, $bn



Source: IMF; Hellenic Statistical Authority

French radio

Vive la résistance

A strike demonstrates opposition to public-sector reform

LIKE martial music after a military coup, France's public radio stations have broadcast little but song tracks for the past three weeks. Since employees at Radio France, which runs seven public stations, began a strike on March 19th, a rotating playlist has been interrupted only for the occasional news update and apology for the disrupted service. The longest strike in French radio's history, it has paralysed programming and exasperated listeners. It encapsulates the difficulties of reforming the French public sector.

The strike began as a protest, mostly by production and technical staff, against a cut in the public subsidy and an attempt to control Radio France's deficit, which will reach €21m ($23m) this year. This could involve 250-330 job losses as well as other rationalisation plans. Radio France, with nearly 5,000 employees, runs two symphony orchestras, for example; Mathieu Gallet, its new boss, has raised the possibility of merging them.

But resistance to reform hardened after it emerged that Mr Gallet, who took over a year ago, had refurbished his office in Radio France's headquarters at the cost of €100,000. This circular 1960s Paris landmark has itself cost €430m to revamp, twice the original estimate, including the construction of a brand-new auditorium for €42m. Mr Gallet apologised, insisting that the work on his office had begun before his arrival and that its wood panelling was "historic".

Part of the problem is a culture clash. Mr Gallet, who talks about branding and about a digital transformation, is regarded by journalists as a sharp-suited bean-counter. "It is not the purpose of public-service broadcasting to be profitable," striking producers declared in an open letter. Soon, they claimed, there would be no budget to send reporters further than the Paris ring road. Many union activists want Mr Gallet's head to roll.

Yet disgruntlement over Mr Gallet's taste for spreadsheets and new furniture masks a real problem at Radio France. A crushing report published this month by the public auditor pointed to a financing crisis and long-running management failures. Between 2010 and 2013 the payroll bill increased by nearly 10%, even as the headcount remained stable—and the audience dwindled at two flagship stations, France Info and France Inter. Strikes continue despite endless union consultation and perks. Journalists with over eight years of service, it noted, get nearly 14 weeks of paid holiday a year. Fully 388 staff are union representatives enjoying protected jobs. There were a staggering 622 works-council meetings in 2013.

Only a tiny minority of the staff—about 6-10%—has taken part in the rolling strike. Many journalists have turned up to work on programmes, but because technical and production staff have stayed at home, they are unable to broadcast them. The government has urged an end to the strike and summoned Mr Gallet, supposedly an independent appointee, to explain himself. It ought to be possible to create consensus for change. "Everybody knows that reform must happen," says one Radio France journalist. So far, though, this looks like a case study in how not to go about it.

Charlemagne | Belarus and the great bear

Russia's antics in Ukraine are upending politics elsewhere

UNTIL science unlocks the secrets of time travel, the world will have to make do with Belarus. Little seems to have changed in this landlocked country of 10m souls, tucked between Poland and Russia, since it emerged blinking into independence after the Soviet disintegration in 1991. Statues of Lenin dot the wide, well-ordered streets of Minsk, the capital. Inside bulky ministries, grim-faced officials recite tractor-production statistics as a guide to the strength of the economy, over three-quarters of which remains in state hands. Belarus is the only country in Europe to retain the death penalty: in 2014 three Belarusians were shot by executioners. Even the food, shrouded in gelatine, mayonnaise and dill, recalls the canteens and mess-halls of an earlier age.

Alexander Lukashenko, the mustachioed strongman who has ruled for over 20 years, will undoubtedly win a fifth term in November's presidential election. The colour revolutions that overturned autocracies in Ukraine and Georgia never had a chance in grey Belarus; in 2010 an opposition demonstration after a fraudulent presidential vote was put down brutally by Mr Lukashenko's goons. Seven of the nine other presidential candidates were imprisoned. European Union sanctions, including a travel ban on Mr Lukashenko, remain in place.

Yet while Belarus remained in the deep freeze, the world around it turned upside down. Last year's revolution in Ukraine and Russia's aggressive reaction to it have jangled nerves in Minsk and inspired a partial strategic rethink. Mr Lukashenko, a long-serving if unreliable ally of Vladimir Putin, condemned Russia's annexation of Crimea and did not join its embargo on EU agricultural exports. Having hosted two rounds of peace talks in Minsk, he now urges America to get involved in Ukraine and has even offered the services of Belarusian peacekeepers.

Mr Lukashenko, an autocrat of the oldest school, has not suddenly changed his spots. He is playing the same old game: balancing one giant neighbour (the EU) against the other (Russia). Indeed, a second lesson he has drawn from Ukraine's tragedy cuts against the first: tread carefully to avoid provoking the bear. Along with Armenia and Kazakhstan, Belarus has joined Russia's Eurasian Economic Union, which bills itself as a rival to the EU (although officials in Minsk downplay Mr Putin's ambition for a currency union). Belarus's command economy stays afloat on the back of vast energy subsidies from Russia, and polls show that Belarusians prefer integration with Russia over Europe.

But the new atmosphere of instability has given Mr Lukashenko room for manoeuvre. Unlike previous pre-election periods, he has not felt obliged to pull fiscal or monetary levers to pump the economy. Opposition candidates have forsworn protest. With the region in flames, the security of Mr Lukashenko looks a better bet than an unknown newcomer.

The economy, meanwhile, argues for a shift. Seen from Minsk, the past 20 years were not so bad (for those who kept their noses out of politics). Of the six countries in the EU's Eastern Partnership (EaP) programme, Belarus has the highest income per person bar oil-rich Azerbaijan (a nastier autocracy). It avoided the chaotic privatisations of Russia and Ukraine, and has no oligarchs straddling business and politics. Day-to-day corruption is minimal, public services mostly work, and unemployment is low, even if the official figures are massaged. Belarus is the only EaP country that has no territorial disputes with its neighbours.

Yet Belarus's economic model is creaking, and the troubles of its Russian patron exacerbate its difficulties. Last year the tumbling Russian rouble forced Belarus to devalue its own currency and impose capital controls. Earlier this year Belarus asked the Kremlin for a $2.5 billion loan, but received just $110m. Real wages are falling, and workers in state-owned firms have been forced to take compulsory unpaid holidays. After 20 years of isolation, officials realise they need European advice and money.

Enter Brussels

Small and lacking in natural resources, Belarus was always an easy place for the West to conduct a values-based foreign policy. The EU tagged Mr Lukashenko "Europe's last dictator" and placed its hopes in the opposition (the regime's unpleasantness made alternative strategies hard to defend). But now officials acknowledge that the policy of disdain simply drove Belarus closer to Russia. Moreover, Mr Putin's adventurism in Ukraine has raised the stakes. As Mr Lukashenko wryly pointed out last week in a swipe at Mr Putin, "there are dictators a bit worse than me, no?"

The EU, including hardline members like Britain and the Netherlands, is now rethinking its approach. It will not abandon its calls for democracy, or its solidarity with the Belarusian opposition. But it is considering a range of ways to work with Mr Lukashenko's regime, from speeding up its visa-application process to support for Belarus's membership of the World Trade Organisation. An EaP summit in Riga next month will be watched closely for signs of a thaw, particularly if Mr Lukashenko is allowed to attend. But that would require him to free the handful of remaining political prisoners, and he fears giving the impression of bowing to pressure. Bigger changes, say officials in Brussels, will have to wait until after the presidential election.

It could all end in tears. Some fear a repeat of the humiliation of 2010, when the EU's last attempt at a rapprochement with Mr Lukashenko died in the post-election crackdown. But Europeans are a more sceptical bunch these days. Rather than wait in vain for their democratic example to inspire Belarus, they believe they have identified common interests with the regime and will work to fulfil them. More than anything, Mr Lukashenko is desperate to preserve Belarus's shaky independence and, thanks to Mr Putin, Europe looks better placed to help him. ■

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Nicola Sturgeon

Calling the tune

EDINBURGH

The Scottish National Party's canny leader could yet break up the United Kingdom

ACCORDING to Google, the most searched-for phrase halfway through Britain's televised election debate on April 2nd was "Nicola Sturgeon". The combative chief of the separatist Scottish National Party (SNP), though unfamiliar to many English voters, was making light work of the leaders of their main political parties. By the end, "Can I vote for the SNP?" was also trending—further evidence that she had impressed many south of the border. So has Ms Sturgeon any plans to put forward candidates in England? "Despite the temptations and encouragement, no," she says, seated in a box-room at the SNP's functional headquarters. Not even to mark the 700th anniversary of the siege of Carlisle, in 1315, a famous Scottish assault on the English border city? The normally rather flinty leader emits a sound that is almost a giggle: "Don't tempt me."

On the shelves behind her are mementoes of the SNP's remarkable rise—from an irrelevant party in the 1960s, to one that may soon be Britain's third biggest—and her own. "She's got Scotland's oil" reads an old SNP advert, depicting Margaret Thatcher as a vampire, the black stuff dripping from her teeth. It is a reminder of what Ms Sturgeon calls the "disgust at what the Thatcher-led Tory government was doing" that first recruited her to the party.

Everywhere, leering from books and photos, is also the image of Alex Salmond, the former leader of the SNP, with whom Ms Sturgeon has had a sometimes vexed relationship. She was expected to become leader in 2004, after Mr Salmond's first crack at the job; then he suddenly fancied another go at it, and shunted her aside. Ms Sturgeon, who grew up in a working-class family near Ayr, on Scotland's west coast, then served as his deputy for a decade. She got her chance after Mr Salmond again stepped down last September, having led Scotland closer to independence, at the referendum held that month, than even the SNP had previously considered possible. And that dream is not dead. Ms Sturgeon has presided over an astonishing surge in support for the party, making her Britain's most powerful female politician.

Crazy paving

Nothing about the SNP's recent rise, including the brush with national dismemberment it occasioned last year, was inevitable. It was chiefly a product of its leaders' passion and cunning. That is how, back in 2011, the SNP won a shock majority in the Scottish Parliament (under an electoral system designed to preclude this), which triggered the referendum. By building a sprawling army of activists, it then took the United Kingdom to the brink: the pro-union campaign won by 55% to 45%.

The SNP's latest achievement is to have retained much of the activism and mass enthusiasm it worked up during the referendum campaign. Its membership has ballooned from 26,000 to over 100,000 in six months. "People don't want to go back to the days, pre-referendum, when the Westminster establishment sidelined and ignored Scotland," its leader explains. SNP gatherings, such as its spring conference on March 28th at which she was introduced as "the only party leader in the UK who people actually like", resemble rock concerts. Polls suggest the party could increase its share of parliamentary seats in Westminster from six to over 40 at the election on May 7th, sweeping to victory even in generations-old Labour Party strongholds like Glasgow (see chart overleaf). It may well hold the balance of power in the next British parliament, in which no one party is likely to hold a majority. Having lost the referendum, the SNP has won its aftermath.

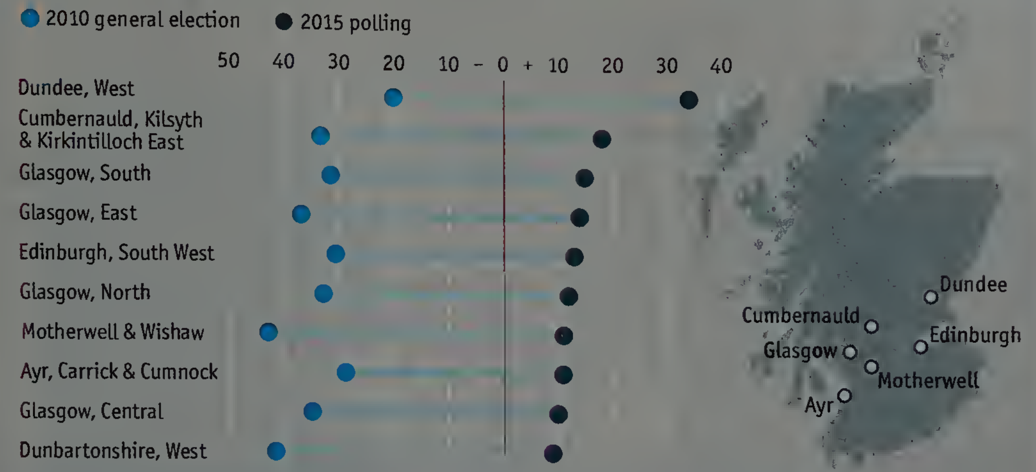
Ms Sturgeon says she wants to use this influence to "pave the way" for Ed Miliband, the leader of the same Labour Party she hopes to annihilate in Scotland, to be prime minister. This means her MPs will oppose any Tory bid to form a government—a retort to their Labour opponents, who tell left-wing Scots that a vote for the SNP helps the Conservatives. "If the SNP and Labour combined have more seats than the Tories do," Ms Sturgeon insists, "we can prevent David Cameron from getting back into Downing Street." Her party will even seek to do so if Labour is the second-largest party, she adds. ▸▸

Internship: The Britain section is looking for an intern to work for several months in The Economist's London offices this summer. Applicants should send a CV and an original article of 600-700 words, about any subject other than the general election, suitable for publication in the section. A stipend of £2,000 per month will be paid. Applications must reach us by May 10th at britainintern@economist.com

Trouble up north

SNP share of vote minus Labour share of vote, % points

2015 ONLINE: UK election central, all our coverage in one location at **Economist.com/ukelection2015**



Sources: Electoral Commission; Ashcroft polling

For this assistance, she would extract a leftist price. Ms Sturgeon envisages her MPs (led by Mr Salmond, who is standing next month for parliament in Westminster) "perhaps forcing" Mr Miliband to avoid spending cuts, opposing the renewal of Britain's nuclear deterrent and closing the National Health Service (NHS) to new private-sector providers. "We won't vote for Labour policies that we think are just carbon copies of Tory policies," she says.

SNP involvement in the next British government, Ms Sturgeon suggests, could form part of "a process in Scotland of people gaining more confidence, of questioning why we should be at the mercy of Westminster". But might a Scottish-flavoured administration in London, dealing with nationalist grievances about austerity, NHS privatisation and the like, in fact make the union look less lousy? Not necessarily, she replies: "I can't tell you when there'll be another independence referendum. I think there will be one and I think there will be a 'yes' vote."

Given that independence is, in fact, the SNP's raison d'être, some suspect it is secretly rooting for the Tories. On April 3rd Ms Sturgeon faced claims that she had confided in the French ambassador to Britain that she wanted Mr Cameron to remain prime minister. Both she and the diplomat deny this; but the SNP could undoubtedly gain from another Conservative-led administration. Opposing a Tory-led government, which would probably contain few, or possibly no, Tory MPs in Scottish seats, would afford the SNP an endless opportunity for nationalist grandstanding.

The referendum on Britain's membership of the EU Mr Cameron has promised, in the event that he remains in office, could be a more specific boon for the separatists. Scots would not vote to leave; if Britain does, the SNP will naturally demand another independence referendum. Ms Sturgeon acknowledges this. Britain leaving the EU, she says, would mean "an awful lot of people in Scotland saying that we need to look at independence again."

Ms Sturgeon's claim that she most wants a Labour government may be sincere. But her suggestion that Scotland's move towards secession is out of her control is wrong. Whether Scotland holds another referendum, as she well knows, will be heavily influenced by her leadership, and she is playing a long game. If a majority of Scots still don't want independence, the SNP's formidably impressive leader is happy to wait. As her unionist rivals discovered on April 2nd, they underestimate her at their—and the union's—peril. ■

A full transcript of our interview with Nicola Sturgeon and a separate video appear on our online election hub, along with regularly updated analysis of the campaign. See: www.economist.com/UKelection2015

Taxes and the election

All must pay

Labour promises to abolish non-doms

ON APRIL 8th Ed Miliband opened up a new front in his campaign to portray Labour as the party of the many against what he calls the "few people at the top". In what was probably his biggest announcement of the campaign so far, the Labour leader promised to abolish the "non-dom" tax status, a peculiarly British ruling whereby some wealthy Britons and foreigners known as non-domiciled residents enjoy special tax exemptions. The main benefit is that they can limit the tax they pay to the British treasury on their earnings outside the country.

To many, the non-dom rule has become a symbol of privilege for the wealthy, and thus an easy target for a left-wing politician on the campaign trail scrapping for votes. But the fact that Mr Miliband's predecessor and political mentor Gordon Brown shied away from doing the same when he was chancellor of the exchequer suggests that abolishing this particular loophole is not as straightforward as it may look.

Mr Miliband describes the non-dom status as an "arcane 200-year rule", and few would disagree. It was introduced during the Napoleonic wars and some of its regulations are indeed mysterious and open to abuse. Non-doms have to prove their foreign status, for instance, but often by arbitrary means. Owning a burial plot abroad can count. Non-dom status can be passed on within families, but only via the father's side. Previous governments have chipped away at the exemption. In 2008, when Mr Brown was prime minister, the government introduced a charge of £30,000 ($45,000) on those who claim non-dom status but have lived in Britain for over seven years of the previous nine. The current chancellor of the exchequer, George Osborne, raised that to as much as £90,000 a year for those who have lived in Britain for 17 of the past 20 years.

Mr Miliband now wants to do away with it altogether, mainly on grounds of fairness. Making sure that everyone pays the full amount of tax they owe in Britain, he argues, is a "British principle". Perhaps. But the fear is that the treasury might lose revenue, a grave matter when all parties are under pressure to cut the deficit.

There are three ways that could happen, if some non-doms decide to leave the country. First, the treasury would forfeit the tax they pay on their British earnings. This applies especially to the super-rich, such as London's resident Russian oligarchs. Second, the treasury would lose the charges that non-doms pay to keep their special tax status. Five thousand people paid these charges in 2012-13, according to data obtained by Mark Davies & Associates, a tax-advice firm, out of the 110,700 people who declared themselves as non-doms. The treasury would lose at least £150m, and possibly much more. Lastly, rich non-doms could pull the plug on their investments in Britain when they go, harming the economy.

Whether a lot of non-doms really would up and leave is questionable. Some of the very wealthy might. But 64,000 non-doms choose to be taxed on their overseas earnings. These are people like nurses and doctors who will stay.

Under Labour's plan, temporary exemptions would be allowed for students and foreign workers seconded to Britain for short periods of time. This makes sense. The non-dom system is an anomaly, but Britain should not stop the flow of skilled foreigners the economy needs. ■

Bagehot | The shrivelled middle

The Conservatives and the Labour Party are both running drearily predictable campaigns

TWO decent British politicians made two perfectly sensible statements this week. First, David Cameron, the Conservative prime minister, refused to rule out cutting the top rate of tax to 40%, which, if affordable, would be reasonable. The British state does not offer high earners anything like Scandinavian-class public services to go with the near-Scandinavian-level tax rates it levies. Ed Miliband, leader of the Labour Party, then promised to end the "non-domicile" regime which for two centuries has allowed an elite group of rich people to pay too little tax. The trouble with these statements, however, was not the message, or the messenger; it was the dismally predictable combination of the two.

Imagine if it had been Mr Cameron promising to dismantle the "non-dom" status until recently enjoyed by his party's erstwhile biggest donor, Lord Ashcroft, and still enjoyed by the sorts of metropolitan jet-setters who bid obscene sums of money at Tory fund-raisers to play tennis with him? That would have addressed his party's big reputational failing: its perceived cosiness with the rich. In a deadlocked contest, in which Labour and Tory ratings are entwined in the low 30s, it might even have been a game-changer. Or what if it had been Mr Miliband, the left-wing son of a Marxist intellectual, who reserved his post-electoral right to cut rich people's taxes? Would that have been one in the eye for the many, not the few, who consider the Labour leader anti-business? Hell yeah, as Mr Miliband, in campaign mode, likes to say.

Instead, these gambits, typically of the Labour and Tory campaigns, reinforced the two parties' reputational weaknesses. And with the polls stuck, that narrowness is causing disquiet in their ranks. The Tories are hammering relentlessly on their decent economic record; a Tory MP divines the need for a "fuller, richer, warmer" pitch. By that he means not only a list of counter-intuitive promises, but more advertising of the gentler things—such as boosting adoption and introducing gay marriage—his party has done in government. On the Labour side, half the shadow frontbench is quietly despairing at the dearth of enterprise and aspiration—hallmarks of Tony Blair's three consecutive victories—in Mr Miliband's campaign. A thoughtful speech by Mr Blair this week, on business and Britain's place in the world, emphasised what was missing. "I am convinced the Labour Party succeeds best when it is in the centre ground," he recently told this newspaper.

It was well said—but that comes with important caveats. First, the moderate centre colonised by Mr Blair, where Labour and Tory voters intermingle, is vastly reduced; its only permanent residents, the Liberal Democrats, have seen their vote shrink by two-thirds—to about 8%—in five years. That was partly a response to the polarising effects of economic malaise and cuts. Yet Mr Blair's ability to attract hordes of Tory voters was also unusual, and—given that he won his last victory, in 2005, with merely 36% of the vote—temporary. Only in 1979, when a similar number went the other way, has there been a comparable migration between Britain's main parties. And in both cases, the exodus was encouraged by an alignment of exceptionally conducive political and economic circumstances: disgust with Labour and economic malaise in 1979; disgust with the Tories and an economy strong enough to entrust to Labour in 1997. Nothing like such clear signals now apply; after the downturn, the Tories have presided over a recovery which too few Britons feel. Besides shrivelling the centre, the despond this has caused has driven an alternative migration, to the populist fringe where, on the right, the UK Independence Party (UKIP) and, on the left, the Scottish National Party and Greens, heckle and whine. Mr Miliband's and Mr Cameron's efforts to prevent that, to shore up their leaky base, is a big reason for their unimaginative campaigns. "Come back home!" Mr Cameron begged his party's defectors to UKIP on April 6th. "Ya boo sucks!" UKIP's solid ratings suggest, most replied.

Yet if Mr Miliband and Mr Cameron are to some degree captured by events, they are also partly to blame. In the first flush of his leadership, Mr Cameron launched a modernisation programme, stressing volunteerism and the environment, which threatened to improve his party's image. That this was blown off-course by the economic storms was understandable; that Mr Cameron then abandoned it was self-defeating. Had he pushed on, trumpeting the compassionate conservatism he claims to be driven by, so drawing the poison from his party's reputation, the Tories would be much better placed to claim the majority their economic lead would normally warrant—and not only by taking Labour votes. They would trickle in from all sides. Because in Britain's new fractured polity, the centre is less a pivot between two big parties than a collection of the attributes—competence, decency, moderation—that most voters prize.

The virtual centre

At least he tried to broaden his party's appeal. Mr Miliband hardly has, either because he considered it impossible—the conviction that Labour was responsible for the downturn was too deep—or, more likely, because he considered it unnecessary. He thought the financial crisis had shunted public opinion to the left, giving him a handy opportunity to disown Labour's record and promote the market interventions he had always yearned for. Belatedly, he realised his error; having no credibility on the economy, Labour has little prospect of winning votes beyond its Tory-hating base. It remains competitive purely because, in the chaos of the Lib Dems' collapse, more of their vote has broken left than right.

Forming a strong government after this election was always going to be tough: the economic and political times are so strange. Yet the efforts of Britain's main parties to adapt to them have been nonetheless poor. A regretful member of the Labour front bench admits the error: "Whichever party loses the election will have to consider its failure to be more counterintuitive a monumental strategic mistake." Whichever wins it should, too. ■

Energy efficiency

Green around the edges

To slash electricity use, both utilities and their customers must play their part

POWER consumption used to march in lockstep with economic growth. As the world recovers from financial crisis, that link is weakening. Though the average conceals wide variations, in 2014 advanced industrialised countries used 0.9% less electricity than in 2013, and slightly less even than in 2007, since when their combined economies have grown by 6.3%.

A new study for the UN Environment Programme concludes that two factors are at work. One is thrift. Faced with rising prices, consumers use less. British electricity prices increased by 44% over the period; consumption fell by 12%. The other is greater use of energy-saving technology. This includes better insulation, advanced heating and cooling systems, and energy-efficient device s, notably light-emitting diodes (LEDs), which, unlike incandescent bulbs, turn most of the power they use into light rather than wasting much of it as heat.

But if global warming is to be held to no more than 2°C by 2050—the level above which most scientists think that climate change risks being dangerous and irreversible—energy use and economic growth need to part ways once and for all. The best hope, experts agree, is a huge increase in energy efficiency. This ought to be straightforward. The technology is getting cheaper and better all the time. Many energy-efficiency measures quickly pay for themselves. Yet progress is frustratingly slow.

The International Energy Agency (IEA), a research organisation for countries which import fossil fuels, reckons that for the 2050 target to be met, global spending on energy efficiency needs to rise from $300 billion a year today to $680 billion. But on current trends, the UN report concludes, the chance of that is "very slim".

The potential gains are huge. Transport accounts for 27% of global energy demand. Lighting, heating, cooling and ventilating buildings account for roughly another third. New vehicles and buildings are far more efficient than old ones. The average annual consumption of an American light commercial vehicle built to 2010 standards is the equivalent of 1.5 tonnes of oil, but standards to be introduced in 2016 will cut that to 1.1 tonnes. A house with a floor area of 300 square metres built to America's 2006 standards consumes the equivalent of 1.1 tonnes of oil a year; one built to 2012 standards, just 0.7 tonnes. Even the newer standards seem timid when set next to "passive houses", which use insulation and heat exchangers to capture and reuse thermal energy generated by the inhabitants' activities. Add solar panels and geothermal energy, and it is possible to create "net-zero" buildings that put as much power into the grid as they draw from it.

Vehicles are replaced every few years. But half the buildings standing today will still be there in 2050. So big efficiency gains can come only from making existing buildings less wasteful. The simplest measure is to persuade consumers to stop throwing energy away, for example by heating or cooling empty rooms. Spotting such waste and helping to cut it is becoming a decent business. Opower, a data-analytics firm, crunches figures on size, occupancy, location and energy bills to find trends and make suggestions to 50m, mostly American, households. Pacific Gas and Electric, a utility in California, says that in 2013 Opower saved it 500 gigawatt-hours, or nearly 75,000 homes-worth, of consumption. Its customers saved more than $50m.

Efficiency gains in the first year are typically 2%, says Alex Laskey, Opower's chief executive. This is a mere nibble out of the 20% of energy use thought to be wasted in a typical American home. But once customers' attention is engaged it is easier to interest them in bigger changes, such as replacing inefficient appliances or installing efficient cooling and heating systems.

Further gains can come from managing demand rather than simply ramping up supply to meet it. In places with poor interconnections, such as Britain, this saves on dirty, costly standby diesel-fired power. But in any system, it saves money, since satisfying peak demand requires costly generating capacity that is unused most of the time. According to the UN Report, global investment in "smart systems"—hardware and software that adjust power consumption in response to price signals—rose by 5% in 2014 to a record $37 billion. That includes smart appliances, such as boilers that switch off when power is costly, and distributed storage, such as batteries to be charged during off-peak hours.

Storing off-peak energy as ice is particularly useful for air-cooling systems, one of the industrialised world's biggest energy ▸▸

hogs. Air conditioning in commercial buildings accounts for about 5% of America's electricity use. But in some parts of the country, on a hot day, the figure can reach 30%. Cooling systems from Calmac, a firm that used to make furnaces, store energy by cooling water mixed with antifreeze when power is cheap, and release it when it is needed, rather than relying on power-hungry compressors to cool the building during peak daytime hours. Mark MacCracken, the firm's boss, likens the approach to preparing ice cubes before a party rather than waiting until a guest asks for a drink.

At first glance, it is puzzling that more of this sort of thing is not already happening. The IEA reckons that only one-third of the available energy-saving opportunities with a cost-effective payback period are taken up. For businesses and residents alike, factors including ignorance, inertia and misaligned incentives still rule. A recent study commissioned by McDonald's suggested that a typical outlet could cut its energy use by at least a fifth—and by up to four-fifths by using solar power. But that depends on decisions made by individual franchisees, who will struggle to assess the potential savings from measures such as capturing heat from a fryer to provide hot water. Some savings can seem too low to be worth the hassle, such as buying a new appliance to halve a small running cost. And tenants are unlikely to invest in energy-saving measures that will benefit their successors most.

Yet behind the scenes, utility companies are preparing for change. Their new business models must encourage consumers to use less energy rather than rely on them to use ever more. At the same time, to replace elderly, inefficient power plants and transmission lines, they need margins healthy enough to support massive investment. Rocky Mountain Institute, a think-tank and research firm, reckons that upgrading America's creaking grid alone will take $2 trillion by 2030. And in many countries, including America, utilities are having to accommodate consumers who also produce energy, typically from solar panels, and sell it to the grid—regardless of whether it is needed or not (see box).

This was a trivial obligation a few years ago. Now it is becoming burdensome. The solar eclipse in Europe last month demonstrated the problem well. In Italy, which has one of Europe's best-developed solar-power industries, as the sunlight faded from the sky, solar output collapsed, and other generators had to take up the slack, of around 27 gigawatt-hours. The eclipse cost Italian consumers around €10m ($10.9m), Cosma Panzacchi of Bernstein, a research firm, reckons. Overall the boom in solar has increased the cost of "balancing" Italy's network—keeping capacity in reserve for cloudy days—by half.

One way for utilities to keep their profit margins as consumption falls is to increase fixed charges, which users pay regardless of how many kilowatt-hours they consume. Consumption-based tariffs hit poor customers hardest, since they are unlikely to have the sort of homes or businesses that can accommodate large installations of solar panels, or the spare cash to invest in fancy energy systems. Another option is to charge users by the capacity of their connection to the grid, rather than the electrons that actually flow across it.

Power switches

The good news for utilities is that for the nimblest, at least, there will be plenty of opportunity to profit. Managing demand via smart systems, together with distributed generation and storage, could be a huge business, Mr Panzacchi reckons—€40 billion annually for European utilities alone, and much more worldwide. With their large scale, utility firms can build storage and solar capacity far more economically than individual consumers can. They have the balance sheets to support big investments. And they have the information on behaviour and technology to guide their customers through the increasingly mystifying choices they must make. That is the kind of muscle needed to make a real difference to the future of the planet. ■

Renewable energy

Not a toy

Plummeting prices are boosting renewables, even as subsidies fall

GLOBAL investment in renewable energy, chiefly wind and solar power, rose by a sixth in 2014, to $270 billion. This was partly because of subsidies in the rich world, such as America's 30% federal tax credit for solar projects. Under a system known as "net metering", consumers with small solar installations can sell surplus power to the grid at the same price as they pay for power flowing in. But even if the tax credit is cut, as expected, solar electricity could displace 9.7% of American retail electricity sales by 2019, reckons Bernstein, a research firm—over 30 times the share today.

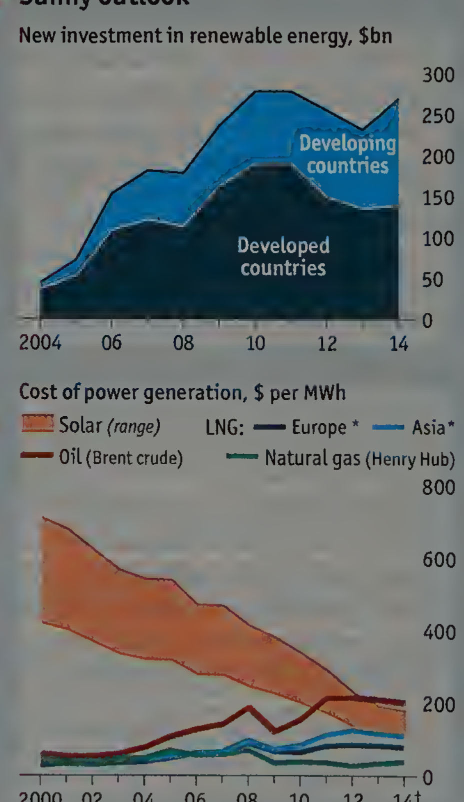
Since big solar installations are more cost-efficient than small ones, that makes little economic sense. But the days when renewables were largely a sop to rich-world consumers' consciences are clearly over. Nearly half of last year's investment was in developing countries, notably China, whose energy concerns have more to do with the near term than with future global warming. It worries about energy security, and it wants to clean up its cities' air, made filthy partly by coal-burning power plants.

The 2014 figure is slightly less than the previous peak, in 2011 (see chart). But investors today get more energy for their buck. The cost of battery storage, a vital part of a solar-powered future, has fallen by 60% since 2005, and the overall cost of a solar-power system is down by 75% since 2000. IHS, a consultancy, reckons the cumulative fall will be 90% by 2025.

A study published on April 7th by Rocky Mountain Institute, a think-tank and consultancy, highlights the changes that plunging costs could bring. Taking the not particularly sunny example of Westchester in New York, it predicts that by 2030, the average monthly bill will be $357 for grid electricity but just $268 for a domestic solar system with battery storage. And whereas most commercial customers depend entirely on the grid today, they will need to take only a quarter of their power from it by 2030—and less than 5% by 2050.

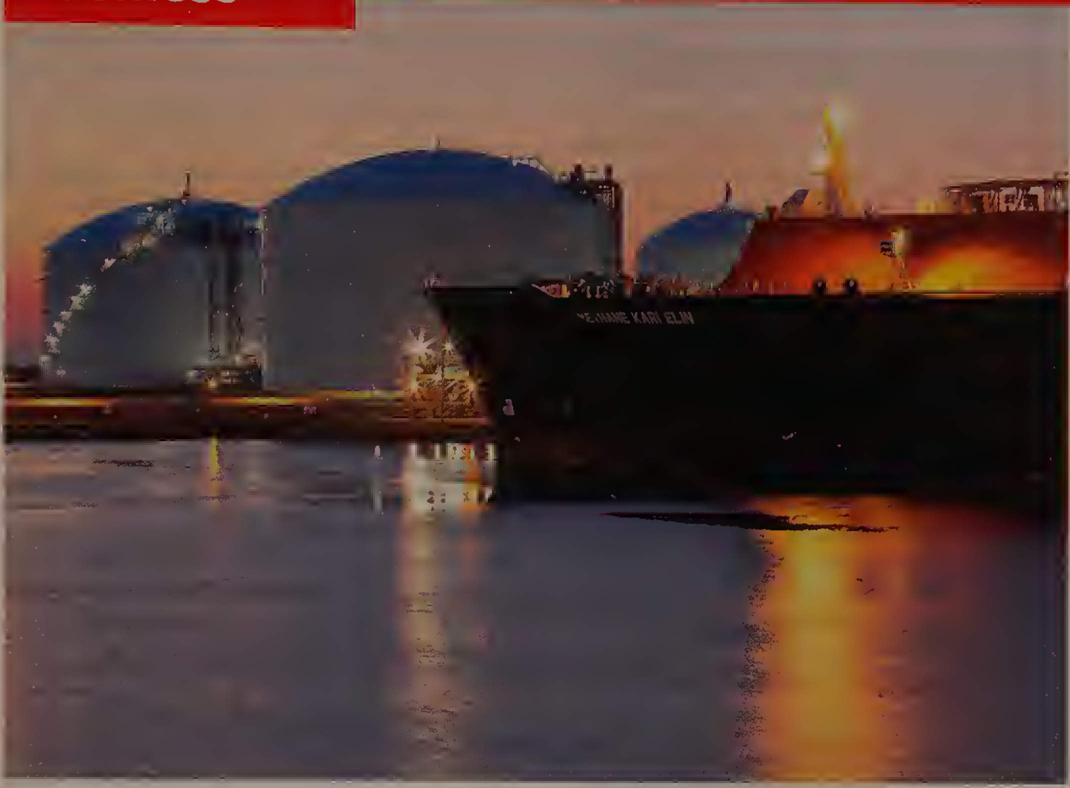
Renewables, excluding large hydro-power schemes, now account for nearly a tenth of global power generation. On current trends they will make up a fifth by 2030. But it will take another step change in efficiency for them to play a decisive role in limiting global warming.

Sunny outlook



Sources: UNEP, Bloomberg New Energy Finance; IHS Energy

*Long-term contract price †To November



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Shell and BG

A vote for gas

Shell's offer for BG shows how the energy business is changing

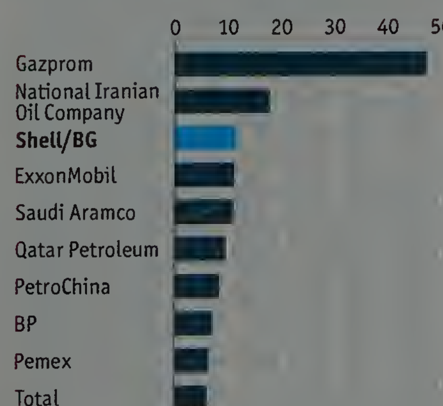
JAM tomorrow, but never jam today. That was long the lament about Britain's third-largest energy company, BG Group. In recent years it has been notable for its great prospects, troubled operations, wobbly management—and lately its weak share price, down by 20% in the past 12 months. Now Shell, an Anglo-Dutch giant, has pounced, with a £47 billion ($70 billion) cash-and-shares offer which pays BG shareholders a 50% premium on what their holdings were worth just before the bid. The combined companies' stockmarket value will be around $250 billion. Barring regulatory objections, the merger will be completed early next year.

The deal—one of several involving BG that has been rumoured, on and off, for years—shows that for the beleaguered international oil giants, buying reserves, even juicily priced, is cheaper and easier than finding and developing them. It also highlights the scope for consolidation since the fall in the oil price last year, which has sent companies scrambling to cut costs and pacify investors. In November Halliburton, an oil-services company with headquarters in Houston, bought Baker Hughes, a smaller rival, for $35 billion.

This deal, far bigger, boosts Shell's declining oil and gas reserves by a quarter, and makes the new firm the world's third-largest gas producer (see chart). Among Western-owned oil and gas firms, it will be second only to ExxonMobil by market capitalisation, and by 2018 its output will overtake that of its American rival.

That assuages one worry for Shell's investors—that it is not replacing its reserves speedily enough to secure its long-term future. But it may not quell another (contradictory) one: that a notoriously spendthrift management is splurging cash on acquisitions which it could be returning to shareholders. Shell counters this as follows: it has already said it is cutting capital spending by $15 billion; it now says it will raise asset sales to $30 billion in 2016-18. It also insists it will maintain its dividend and raise its share buy-backs, all to its newly enlarged investor base. It expects the takeover to generate $2.5 billion of cost savings, in everything from purchasing to trading.

Expanding in gas
Largest gas-producing companies
Billions of cubic feet per day, 2014 or latest



Sources: Bloomberg; company reports; *The Economist*

The deal underlines the way the money is moving in the energy industry. Shell managers highlight the increasing attractiveness of midstream (transport) and downstream (refining and distribution) activities, which offer less risk and fatter margins than finding and developing new oil and gas. One of BG's strengths, for example, is in the liquefaction, transport and storage of gas. Its fleet of giant tankers will boost Shell's clout in the world gas market.

The purchase also demonstrates that gas is a more promising business than oil. Indeed, Shell is now more Gas Giant than Big Oil. This is not easy money: the global gas industry has been plagued by high costs (much gas is in hard-to-reach places such as the Arctic and deep oceans) and low prices (thanks to competition from other fuels and America's shale-gas glut). But the market is growing, supplies are abundant and the environmental outlook friendlier than for oil. BG has promising offshore assets, including in east Africa, Kazakhstan and Trinidad. Some are troubled: a big investment in Egypt is beset by political difficulties. Others are doing better. A $20 billion Australian project is now producing gas from coal. Having tripped up in shale ventures in China and America, Shell is now betting heavily on offshore gas. Simon Henry, its finance chief, says he doubts the gas glut will persist. In any case, a bigger and stronger company is better placed to ride it out.

Other deals may follow, just as the last oil-price crash in the 1990s brought a wave of mergers. Among possible takeover targets are Tullow, a British oil and gas explorer (whose share price rose by 4.5% on news ▶▶

of the BG deal, having fallen by half since last summer). Such small companies with exciting but risky projects are particularly exposed in current conditions.

But bigger acquisitions could be on the horizon too, perhaps even involving BP, Britain's largest energy company, which no longer looks too big to buy. Absorbing BG will keep Shell busy for a while (particularly given its mixed record in managing previous purchases). But the deal could prompt one of its two main American rivals, Chevron or ExxonMobil, to try to regain dominance by making a move on BP.

For all their enthusiasm for the deal, Shell and BG are merging mainly from necessity. Though BG had stopped disappointing shareholders, and had brought in a capable new boss, Helge Lund, from Norway, its fortunes were too closely tied to volatile gas prices; and its main oil partner in Brazil, Petrobras, is mired in a corruption scandal. For its part Shell was struggling to replenish reserves and cut costs. Assuming BG delivers, the deal solves both these problems, and strengthens Shell's cashflow.

The fall in the oil price has highlighted the weaknesses of energy companies that place big, long-term bets on difficult production and exploration projects. When times were good they excited their engineers with the technical challenges, and boosted their executives' egos with ever-bigger balance-sheets. Firms are now dealing with rising debts—those of the largest American and European energy companies have risen by $31 billion so far this year—and falling share prices, down by a fifth since the summer. They are selling assets in a buyers' market.

Behind the Shell-BG deal, and the speculation of more mergers to come, is an even more fundamental shift in the energy industry. Contrary to some expectations, the oil-price fall has not derailed the American shale boom. The small, flexible and innovative firms that specialise in horizontal drilling and hydraulic fracturing are proving better at cutting costs, raising productivity and adapting to market fluctuations than the lumbering giants who have long dominated the industry. Dinosaurs may mate to ensure the survival of their species. But this is an age of mammals. ■

Commercial drones

Up

SHENZHEN

A Chinese firm has taken the lead in a promising market

SOMETHING new is in the air. Look up as you approach the plaza outside the building where Da-Jiang Innovations (DJI) has its headquarters, in the Chinese city of Shenzhen, and you may well see a hovering eye in the sky staring back at you. It belongs to a drone made by DJI, a pioneer in the nascent market for commercial unmanned aircraft.

On March 8th, at press events in New York, London and Munich, the firm launched its new Phantom 3 range of drones. Even the basic model has a built-in camera that takes 12 megapixel stills and video at the "1080p" high-definition standard. The firm, founded in 2006 by a mainlander who studied engineering in Hong Kong, has become a leading light in the industry. It has filed hundreds of patents, and is launching lawsuits against rivals it suspects of infringing its intellectual property.

DJI's drones are lightweight and relatively easy to use. Newer models come with built-in GPS and a motorised mount that stabilises the camera while letting it rotate in several directions. Considering the technology embedded inside, they are also inexpensive: a new Phantom 3 can be had for about $1,000.

Rather as Boeing did with commercial airliners in the 1930s, DJI is today leading the charge in transforming civilian-drone manufacturing from something for hobbyists into a proper business. The Association for Unmanned Vehicle Systems International, an industry body, predicts that drones will become ubiquitous, with all sorts of uses, from crop monitoring to atmospheric research, from oil exploration to internet provision (see page 72). WinterGreen, a research firm, forecasts that global sales of civilian unmanned craft will approach $5 billion in 2021.

Venture capitalists and technology companies, from Boeing and GE to Qualcomm, are now pouring money into drone firms. An American outfit, 3D Robotics (founded by Chris Anderson, a former journalist at this newspaper), raised $50m in venture capital in February. Ehang Guangshi Technology, another Chinese drone startup, recently got $10m in venture-capital funding

Now, rumours are swirling in Silicon Valley that DJI is looking for its first injection of outside cash. It is thought to have made around $500m in revenues in 2014 (the company declines to confirm this), and it may be on track to become the first maker of consumer drones to reach a billion dollars in annual sales.

There will be growing pains. As drone-makers' sales soar, so will its customers' expectations of good service. On DJI's website, users grumble that a firm of its size should put more of its resources into this area: "Try to call them...and they treat you like you are an inconvenience," writes one. Over-regulation is another risk. A Phantom drone crashed onto the White House lawn in Washington, DC, in January; in response, DJI rushed out an upgrade to its drones' onboard firmware that included many new "no-fly zones", to head off the risk of outright bans. Although America's Federal Aviation Administration plans to relax its curbs on drones, they will still have to stay within sight of their human operators and only fly by day.

Such is the civil-drone industry's potential, DJI is bound to face a rising number of competitors, from China and abroad. It argues that it has a technological edge, including tens of millions of hours of flights, that newcomers will find hard to beat. It scorns the idea that the defence giants who make drones for America's armed forces will eventually muscle in on its business: yes, they are technologically advanced, says DJI's Andy Pan, but "they take five to six years to introduce a new model whereas we take five to six months."

In reviewing the Phantom 2 Vision in January 2014, the *New York Times* gushed that just five years ago such kit "would have seemed like a science-fiction film prop or a piece of surveillance hardware flown only by the sexiest of superspies." The fact that this model is now obsolete speaks volumes for how quickly the industry is advancing. ■

Streaming video

A business home run

NEW YORK

Baseball's flourishing media division may have outgrown its parent

AROUND this time last year, Home Box Office (HBO) turned a success into an embarrassment. Within a five-week period, two of the broadcaster's shows drew such large audiences that its online streaming service for subscribers collapsed. The firm could not afford further hiccups during its launch this week of HBO Now, an over-the-top (OTT) service that delivers shows via the internet to viewers without a cable-television package. To ensure reliable delivery, HBO turned to an unusual source: Major League Baseball (MLB), or more specifically its media-technology arm, MLBAM, which has become a leader in the video-streaming business.

It would be hard to design a better incubator for a live-video startup than baseball. Sports are the type of content that viewers are keenest on watching in real time, which has driven rights fees to record levels. MLB, whose new season opened on April 5th, holds 2,500 games per year—and thus produces far more content than other sports. Moreover, most of its games are only broadcast locally, and cannot be seen on TV by fans in other cities.

In the internet's early days, connections were too slow for live video. But by 2000 baseball's officials foresaw mass broadband, and its 30 teams launched MLBAM as a joint venture. They agreed to chip in $1m per club per year over the next four years. That proved unnecessary: thanks to the launch of MLB.tv, a subscription service that shows live games to viewers outside the teams' local markets, it only spent $77m before becoming profitable in 2003.

Streamed live to your smartphone

Next, MLBAM focused on improving quality and on complementary software, such as online ticketing and an app for Apple smartphones. By the mid-2000s other content owners began to notice its technical prowess. It is far pricier and slower to build video architecture from scratch than to use MLBAM, which can withstand crushing demand loads, and authenticate and geo-locate viewers in milliseconds. In 2010 the firm began handling online distribution for ESPN, a sports network owned by Disney. In 2011 it powered the launch of TheBlaze, a conservative news channel. In 2013 World Wrestling Entertainment hired it to run a new OTT offering. In March Sony unveiled PlayStation Vue, which uses MLBAM to transmit television shows over game consoles.

Baseball has reaped a windfall from MLBAM: its $800m in revenue last year was 9% of the major leagues' total. Its growth could accelerate as streaming video gains ground. Last month Twitter said it had acquired Periscope, which lets users share live footage from their phones. Businesses built on such "social streaming" could create a new category of customers. Although MLBAM is sure to attract competition, it enjoys strong barriers to entry. Since reliability is paramount in live video, content owners are willing to pay up for a provider with a proven record. And only a well-heeled rival could replicate its network of data centres—its capital spending has already exceeded $500m.

MLBAM's success has led analysts to ask whether its non-baseball services might ▸▸

Drug dealing

The net closes

The web's two largest drug markets go down, panicking dealers and buyers

"I JUST can't bear this any longer," writes "Megan" in an anonymous internet forum. Waiting for online shopping to be delivered is frustrating. But for drug users it can be agony. Megan's vice is OxyContin, an addictive prescription painkiller. Like many users, she buys her illicit supply on the "dark web", a hidden corner of the internet accessed with anonymous browsing software. In the past month the online market for drugs has been rattled, after the two main drug-dealing sites suddenly locked buyers and sellers out. "If you know anyone...who would sort something out for me tonight or tomorrow I'll drop dead of gratitude," pleads Megan.

The illegal-drugs trade, worth perhaps $300 billion a year, has been creeping onto the web. Like other online retailers, drug dealers can undercut the high street by spending less on maintaining a physical presence and employing salesmen. Consumers like the convenience and safety of shopping from home, and online product reviews are especially useful when buying potentially deadly substances. Bitcoin, a near-untraceable digital currency, covers their tracks. One in seven American drug users have ordered a fix online, according to one survey.

This was all upset on March 18th when Evolution Marketplace, the Amazon of the dark web, vanished in a puff of pixels. Unlike Silk Road, shut down by the FBI in 2013, Evolution seems to have been taken down by the people who ran it. In a brazen "exit scam", the site's anonymous administrators apparently made off with up to $15m in Bitcoin payments that they were holding in escrow.

A few days later, users reported that Agora, the next-biggest drug-peddling site, was inaccessible. Amid rumours of another scam, its administrators reassured buyers and sellers that they were simply carrying out technical upgrades. A rush of users migrating from Evolution may have put its servers under strain. The site has also suffered "denial of service" attacks—by law enforcers or rival dealers, no one is sure. After a wobbly Easter weekend, Agora is back, for now.

Together, Evolution and Agora were responsible for 82% of online drug listings, according to the Digital Citizens' Alliance, which monitors illicit online markets. Each was bigger than Silk Road ever was. A dozen smaller players, such as Nucleus Marketplace and BlackBank, stand to benefit from their problems.

The recent trial of Ross Ulbricht, Silk Road's creator, showed how deeply police have infiltrated the dark web. This is bad for business: though punters don't much fear arrest, they are wary of being ripped off, and better law enforcement increases the incentive for administrators to shut up shop and run off with the loot, says James Martin, a criminologist at Macquarie University in Australia.

Back in the online forum, another user suggests to Megan that if she can't get hold of OxyContin online, she could ask local dealers for heroin, which satisfies the same craving. What's more, he observes, "it's available in any country that has streets". It is also far deadlier. Driving drug users off the web and onto the backstreets carries risks.

fare better on their own. Wall Street banks have been encouraging it to go public since 2005, and Apple-watchers have identified it as an acquisition target, since its technology could help the tech giant secure exclusive content for Apple TV, an OTT service. Bob Bowman, MLBAM's head, insists that it is only pursuing minority investments from partners within its industry.

MLB has no interest in disrupting networks like ESPN, whose rights fees help keep it afloat. So its own subscription service, MLB.tv, meticulously blanks out nationally broadcast and "in-market" games. This means that fans who want to watch their local teams must keep subscribing for pay-TV packages that include the sports networks.

However, streaming video could shift the balance of power between upstart OTT services and legacy cable providers. Thanks to MLBAM's technology, numerous OTT platforms now carry the ESPN network. Sports fans may increasingly dump the cable firms' expensive TV packages in favour of cheaper OTT ones. If so, cable firms may be relegated to mere "dumb pipes" providing only internet access, a business whose margins might easily be competed away. ■

Ageing consumers

Chasing the grey yen

TOKYO

Japanese firms have wisdom to hand down about selling to the elderly

DESIGNING underwear to fit human curves is tricky. For decades, Wacoal, a global manufacturer of lingerie based in Kyoto, has been measuring the female form and making products that factor in the toll of time and gravity. Its research is proving ever more rewarding. The company's sales to senior citizens—who are just as interested in a graceful silhouette as women decades younger—are growing by double-digit rates each year.

Many societies are ageing, from America to China, but Japan has a head start. One in four Japanese are over 65; by 2035 it will be one in three. So the country is serving as the world's laboratory for selling to older consumers. Elderly Japanese outspend younger ones, says a study by the Boston Consulting Group. They now account for two-fifths of personal consumption.

Many of the country's biggest firms have adjusted their strategies to tap into the grey yen. Panasonic, a maker of domestic appliances, has rolled out a string of new products, including foot heaters and lightweight vacuum cleaners. Aeon, a giant retailer and shopping-centre operator, has a "Grand Generation" strategy, which ranges from providing one-stop medical clinics on the premises to making in-store signs easier to read. Fujitsu, an electronics firm, has sold 20m of its "Raku Raku" mobile phones, with larger buttons and simplified functions, and is now introducing them into Europe.

Japanese firms have been equally inventive in the area of medical products for the elderly. But this is an area where cumbersome regulation can hold them back. Cyberdyne, a spin-off from the University of Tsukuba, designed a robotic exoskeleton suit to give mobility to the elderly and disabled. Although it gained approval for clinical use in Europe in 2013, it has yet to do so at home. Testing for medical products is costly as well as slow in Japan, and getting new devices covered by health insurance is a long and arduous process. Having opened up a lead in robotics for nursing care, the country risks losing it.

Regulation is not the only pitfall firms face, however. Businesses are finding it is easier to invent products that the elderly might find useful than it is to market those products to them. One reason is that older consumers do not appreciate being reminded that they are old. A recent report by McKinsey, a consulting firm, describes how one Japanese firm, Bridgestone, made the mistake of promoting a new line of golf clubs as being for senior citizens; a rival brand did better by avoiding any explicit mention of age, but stressing its clubs' ability to make the ball travel far, tapping into older golfers' anxieties about not being able to whack it like they used to.

Must be accompanied at all times

With this in mind, advertising campaigns often tread delicately around the age issue. Toyota, a carmaker, uses silver-haired, middle-aged models to target ageing baby-boomers but those of pensionable age seldom appear in ads of any kind unless accompanied by young actors representing their children or grandchildren.

Some companies, such as Wacoal, have created separate brands and marketing campaigns for their new products designed for older consumers, so as to avoid damaging the "young" image of their main brand. However, Florian Kohlbacher, co-editor of "The Silver Market Phenomenon", a marketing handbook, argues that it is often better, instead of creating separate products just for the old, to design ones that bridge the generations. Toyota increasingly loads its cars with lasers, cameras and sensors to prevent collisions, for example. Such safety features can be marketed to drivers of all ages, but the main beneficiaries are the increasing numbers of elderly motorists: although total traffic deaths in Japan have roughly halved over the past two decades, the number of fatalities involving the over-65s is rising.

Debates such as these will soon enough be part of boardroom discussions outside Japan, too. In the end, says Mr Kohlbacher, all managers will have to find ways to market to the old without either offending them or putting off younger consumers. They might start by actually talking to the elderly, who have more experience of shopping, after all, than anyone else. ■

The perfect car for youngsters like us

European business and the recovery

Green shoots, risk of frost

BERLIN, MADRID, MILAN AND PARIS

Companies in the euro zone are finally enjoying the benefits of a tentative recovery, but its continuance is by no means assured

LESS than a year ago most global investors looked at stagnant Europe, shuddered and passed by. Now European share prices are soaring (see chart 1). The euro area's top 50 blue-chips gained almost 18% in the first three months of the year. American mutual funds are yanking their money out of other assets to invest it in European stockmarkets. More cash may be heading the continent's way. In January a net 18% of the global fund managers regularly polled by Bank of America Merrill Lynch chose Europe as the region they would most like to go overweight on in the coming 12 months. In March 63% did so.

In part this newfound enthusiasm for Old World equities simply reflects drearier prospects elsewhere, plus a bet that the quantitative easing belatedly launched last month by the European Central Bank (ECB)—which plans to buy €60 billion ($65 billion) of financial assets a month until September 2016—will raise asset prices in the euro zone as similar programmes did in America and Britain. But it is also a response to signs that the euro zone, long a drag on world growth, is starting to help it.

One cause of the turnaround is the weakness of the euro, which has fallen by 12% against the currencies of the zone's principal external trading partners in the past year. The euro area is a net exporter of goods, and the currency's weakness is helping it to sell more abroad. Another is that the price of crude oil has fallen, even against a weakening euro, cutting firms' energy and raw-material costs and raising consumers' purchasing power (see chart 2, next page). The ECB's bond-buying is pushing already-low borrowing rates even lower. Credit conditions are easing, including for small and medium-sized firms.

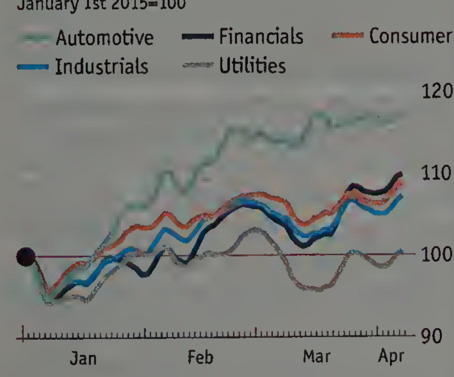
European business activity is increasing at its fastest pace since May 2011, according to Markit's latest composite purchasing-managers' index, with new orders driving growth in manufacturing and services. Retail sales are rising too. Economists are falling over themselves to revise their growth forecasts upward. The region as a whole grew by a mere 0.9% in 2014. The OECD, a rich-country think-tank, now reckons the euro area will grow by 1.4% in 2015 and by 2% in 2016. The ECB and the credit-rating agencies and investment banks think along similar lines. Germany, where real wages are rising, will do most to pull the euro zone out of the mire, but France and Italy, hitherto laggards, are expected to show slightly perkier growth too. Spain's central bank thinks its economy could expand by as much as 2.8% this year.

All of this is helping companies which produce the goods and services that customers buy when they have a little more cash in their wallets, and confidence in the future. Analysts are upgrading earnings estimates for carmakers and their suppliers, technology companies, hotel and leisure groups, media and financial-services firms, with health care and chemicals joining their ranks, says Sharon Bell of Goldman Sachs, an investment bank.

The benefits of this changing mood are not evenly distributed, however. Much depends on size, sector and sales patterns. Start with size. Europe's myriad small firms are still in a wait-and-see mood rather than a go-for-growth one. An index of business conditions compiled by UEAPME, a small firms' lobby group, has been inching upwards since early 2013. Chloé Magnier of CM Economics, a research outfit, explains that bigger firms always benefit first from an uptick in demand; it takes time before they pass orders on to smaller suppliers.

Driving ahead 1

Euro-area share prices by industry
January 1st 2015=100



Sources: Thomson Reuters; *The Economist*

Larger firms are more likely to reap gains from a weaker euro, too. Sanofi, a French drugmaker, reckons foreign-exchange movements added three percentage points to its revenue growth in the fourth quarter of 2014. Though many large European firms hedge their currency exposures to some extent, both by using financial instruments and by moving production to where their customers are, almost all enjoy a boost to their bottom lines from translating foreign-currency earnings back into a weaker home currency.

Sector is the second determinant of success. Among those benefiting from lower oil prices is Continental, a German maker of car tyres and other parts. Its chief financial officer, Wolfgang Schäfer, says cheap fuel has been especially helpful in America, where sales of new cars have soared. In Europe, it has prompted an increase in miles driven, which means more tyres needing replacement. Last year sales of new cars began growing again in the European Union, after falling for six years. The recovery should speed up this year.

Although automotive share prices have risen most vertiginously so far this year of all the Stoxx Europe 600 sectors, the reverse is true for oil and gas stocks. Total, a French oil company, reported sharply lower revenue in the last three months of 2014, for example, and has been busily downsizing since then. Companies that make capital equipment destined for the oil sector are struggling, too.

But such firms are outnumbered by those gaining from the combination of cheap energy and a cheap euro. This is where sales patterns come in. The largest businesses in the euro zone's 19 member countries are among the world's most internationalised. Over three-fifths of the sales of the companies that make up the main stockmarket indices in Germany, France, Italy and Spain are from outside their home markets. They are often prime movers in a global market with little dependence on the European economy. "Airbus and aeronautics didn't have a crisis," says Marwan Lahoud, a senior executive at the aircraft-maker. Indeed, booming demand for planes from emerging Asia and elsewhere has kept its factories, and those of its suppliers, going at full tilt.

Generally, such globalised firms have fared a lot better than ones more dependent on Europe (see chart 3). Better opportunities outside their sluggish domestic economies have encouraged many once-parochial companies to seek new export markets. This is especially visible in Spain. Rafael Doménech, an economist at BBVA, a ▸▸

bank, says it has witnessed "a drastic change in culture". Spain's exports grew from the equivalent of 24.4% of GDP at the start of 2009 to 32% by the end of 2014 (in Germany the figure is 45.7%).

A similar realisation has dawned on Italian businesses, says Nino Tronchetti Provera of Ambienta, a private-equity fund. Sales to non-EU countries are growing by around 7% a year, though Italy's exports are still equivalent to just 29.3% of GDP. Five years ago Elemaster Group, an electronics firm, was almost wholly focused on Europe and made 60% of its revenues in Italy. It brought in a private-equity fund to help it become more international. Today Italy accounts for 35% of sales, the rest of Europe another 35%, and more distant markets the rest. The firm has plants in America, China, India and Tunisia. Revenues rose by 18% last year, to €175m.

Although the prolonged downturn has prompted many European businesses to look farther afield for customers, they typically have not used the crisis as an opportunity to restructure and wring out excess capacity to the extent that American businesses did, says Stefano Aversa of AlixPartners, another consulting outfit. Political and social constraints have prevented large-scale labour-shedding. Partly as a result, profits have been slow to rebound.

Many European manufacturers are continuing to make progress in reducing non-labour costs. Germany's three big carmakers—Volkswagen, Daimler and BMW—are sticking to their cost-cutting targets despite the gathering recovery at home and record sales abroad. They are doing so by relying on a German speciality: making production processes more efficient.

Consolidation, to improve pricing power and profits, is also in the wind and has been for a year or so. The value of mergers and acquisitions with euro-zone companies as their targets is still well below the pre-crisis peak, but it has near-doubled from its low (see chart 4). Some highly fragmented European industries—mobile telecoms and airlines come to mind—are surely prime targets for takeover activity. This week's mammoth bid by Shell, an Anglo-Dutch oil firm, for BG Group may prompt further consolidation among Europe's struggling oil and gas firms.

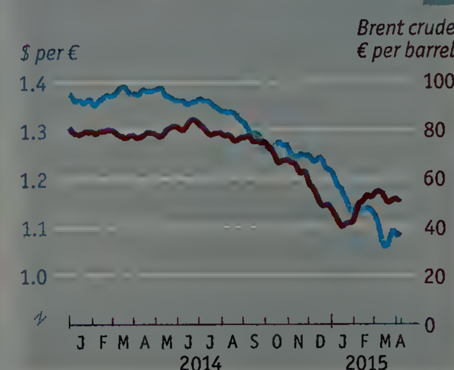
Non-European buyers are also sniffing around, in part because fears that a Greek exit from the euro might send shock waves across the region seem to have subsided. This week FedEx, an American parcel-delivery firm, launched a €4.4 billion offer for TNT Express, a Dutch rival, saying it wanted to strengthen its presence in Europe. Among Italy's recent spate of bids from abroad, the €7.1 billion Chinese takeover of Pirelli, a tyremaker, stands out.

France's government, however, is still ambiguous about foreign takeovers. It welcomed the investment in PSA Peugeot-Citroën, an ailing carmaker, by a Chinese firm last year. It reluctantly came to terms with an American firm, GE, buying most of Alstom, an energy and transport conglomerate. But it has just stymied an Asian bid for Dailymotion, an online-video firm. And, in another move bound to make foreign investors think twice, it decided this week to spend up to €1.23 billion increasing its stake in Renault, to force the carmaker to implement a new rule granting extra rights to long-term shareholders.

European firms are themselves begin-

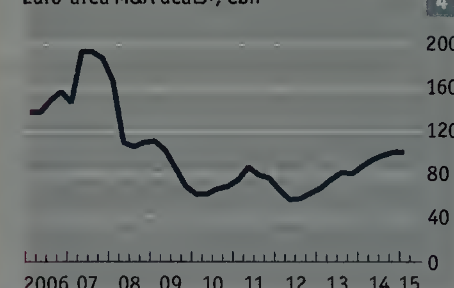
Markets up, oil and euro down

Exchange rates and oil price 2



Euro Stoxx 50, January 2007=100 3

Euro-area M&A deals‡, €bn 4



Sources: Bloomberg; Thomson Reuters; Dealogic; *The Economist*

*Euro Stoxx 50 weighted by revenues outside of Europe
†Weighted by European revenues
‡Four-quarter moving average

ning to do big deals once more. Merck, a German pharmaceutical company (not to be confused with a similarly named American one), said in September that it would buy Sigma-Aldrich, an American life-sciences firm, for $17 billion. But Marcus Kuhnert, Merck's chief financial officer, insists that a return to pre-crisis exuberance is not on the cards: the aim now is profitable growth, not a spending spree, he says.

For all these promising signs, there are two big concerns. One is that unemployment across the euro zone—11.3% in February, down from 11.8% a year earlier—is not falling more quickly towards its 2002-07 average of 8.6%. If households remain anxious about their prospects, they may be reluctant to start spending properly again.

The second is that business investment is also slow in picking up. There are reasons for this. Capacity utilisation in European industry is still only 80%. With banks still somewhat hesitant to lend, many firms hoard cash in case they need it later. A scheme announced in November by the European Commission president, Jean-Claude Juncker, to mobilise €315 billion of private and public money for investments in infrastructure, energy and other "strategic" areas, is well-intentioned, but the EU's contribution looks too small to prompt businesses to provide their share.

Investment in digital infrastructure has been especially weak. Spending on improving broadband in Europe fell from €106 per person in 2008 to €90 in 2013, while Japan raised its investment to €226 and America to €178, says BusinessEurope, a pressure group. For Michel Combes, the boss of Alcatel-Lucent, a telecoms-equipment maker, to have underinvested in digital infrastructure is Europe's real weakness. If it misses out on trends like the "internet of things"—embedding miniature computers in everyday objects and connecting them wirelessly—it "will lag for a very long time".

The big question is not whether the euro-zone economy can grow, given the current, extraordinarily favourable combination of a cheap currency, low oil prices and low financing costs. It is whether that expansion will be self-sustaining by the time the euro and oil prices steady and the ECB's bond-buying stops. Have countries and companies cleaned house sufficiently during the dark days since 2008—liberalising labour and product markets, cutting taxes and red tape, on the one hand, and streamlining corporate structures, processes and costs, on the other?

Klaus Wiener, chief economist at Generali Investments Europe, is among those who believe that a rising tide of higher exports and improving domestic demand will eventually raise all boats, but at very different speeds. Countries that have made their labour markets, in particular, more flexible offer the best chances of success: their ranks include Germany and Spain. Italy has just embarked on serious reform after a decade and a half of stagnation; to many foreigners with cash to spend it is now the bloc's most interesting market, with France a big step behind. Firms that have reduced costs and become more efficient, and expanded into new markets far beyond their home countries, will enjoy the biggest gains. In other words, Europe's recovery will most benefit those businesses and places that have used the crisis to become less European. ■

Schumpeter | Retail religion

Robert Schuller, an entrepreneur of televangelism and megachurches, died on April 2nd

IN THE 1980s and 1990s no visit to Southern California was complete without a trip to Robert Schuller's Crystal Cathedral in Garden Grove, a short drive from Disneyland. It was the most striking of a new crop of megachurches that were springing up across America. Twelve storeys high and made from 10,000 panes of glass, it made worshippers feel they were praying in the Orange county sun. Mr Schuller was the most successful of a new breed of televangelists who realised that technology was their friend. He may have lacked Jimmy Swaggart's swagger and Jerry Falwell's political clout. But he possessed what passed in that world for gravitas. Dressed in flowing, purple robes Dr Schuller, as he always called himself, preached the Word not just to the 3,000-strong congregation (with another 3,000 waiting for the second shift) but also to millions watching on television.

Mr Schuller, who died on April 2nd, was the leading example of a very American breed of businessperson: the pastorpreneur. He succeeded by applying the principles of business to religion. However, in his later years, a religious empire that had grown huge by embracing economies of scale and customer focus fell victim to two familiar causes of business failure: poor succession planning, and a failure to react to dynamic new competitors.

He had started preaching at the age of five, to his father's cows; he opened his first ministry in 1955, in a drive-in cinema in Los Angeles. His wife played an organ that was hitched to the back of their car. Mr Schuller preached from the roof of a hot-dog stand. The audience sat in their cars and listened via tiny speakers. The church's motto was perfectly tailored to the emerging American Autopia: "Come as you are, pray in the family car."

As his audience grew and the tithes rolled in, Mr Schuller abandoned his hot-dog stand. In 1961 he built a bricks-and-mortar "walk-in, drive-in" church. In 1970 he began broadcasting his "Hour of Power". In 1980, his flock still swelling, he built his $20m Crystal Cathedral. He hosted the "Hour of Power" until 2010, its audience peaking at 20m viewers in about 180 countries.

The key to his success was his relentless customer focus. In a 1983 interview with the *Los Angeles Times* he described his Crystal Cathedral as a "22-acre shopping centre for Jesus Christ" and called himself a "religious retailer". Just as a good shopping centre should provide everything from groceries to shoes, so a good megachurch should provide everything from Bible studies to dance classes, he argued; and just as a retailer should know his customer, so a pastorpreneur should know his flock. He conducted regular surveys of his audience and, more important, the people he wasn't reaching. ("There are still a heck of a lot of people out there overdosing, blowing their brains out and getting herpes.") He recognised that the precondition for success in retailing of any kind, spiritual or secular, was good parking.

His sermons also conformed to his belief in giving the audience what they wanted. He recognised that the fire-and-brimstone preaching of the old Evangelicals had limited appeal in a world of McDonald's and Disneyland. He preached a different Protestantism, that owed as much to Norman Vincent Peale, the author of "The Power of Positive Thinking", as it did to Martin Luther. "The classical error of historical Christianity is that we have never started with the value of the person," he wrote in his book, "Self-Esteem: The New Reformation".

He added three other elements into this customer-friendly formula. Economies of scale helped him reduce the costs of reaching a bigger audience; the "Hour of Power" made him the world's most widely watched preacher. He knew that the first rule of marketing is to hold people's attention; so he built his cathedral from glass, installed one of the best organs in the world and invited a constant stream of celebrities, including presidents and film stars. And he understood cross-promotion: his bestselling books promoted his church services, and vice versa.

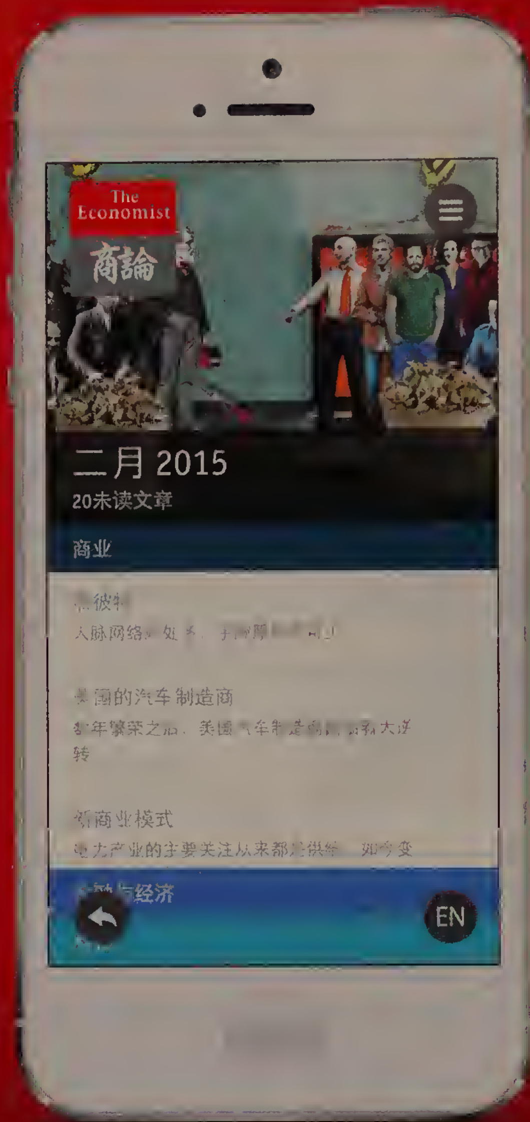
Mr Schuller's seminars on church leadership attracted crowds of would-be pastorpreneurs who paid handsomely for his insights. But in his obsession with positive thinking he ignored the problem of failure. This proved an expensive oversight: in the last decade of his life, his virtuous circle of expansion and hype turned vicious. The problems had accumulated for years. His audience had turned grey with him. The field had become crowded with ever more vigorous vicars, particularly from emerging economies like Brazil. His family were extracting too much rent from the business: about 20 relatives were employed by his ministry at some point or other. But the entire edifice was brought down by the oldest problem of family enterprises: a botched succession. He installed his son as chosen successor in 2006 but removed him two years later, citing a "lack of shared vision", eventually replacing him with his oldest daughters.

Selling out to the competition

In 2010 Crystal Cathedral Ministries filed for bankruptcy, with debts of more than $43m. In 2012 Mr Schuller sold his Crystal Cathedral to the Roman Catholic diocese of Orange for $57.5m. Mr Schuller even sued his former ministry for $5m for copyright infringement and breach of contract—he was awarded a lesser sum. The Schuller brand had become thoroughly toxic.

Mr Schuller's downfall offers a true-life parable for the denizens of Silicon Valley. Tech titans and televangelists may breathe the same Californian air, but they see themselves as belonging to different mental universes. Yet there are more similarities between the two tribes than either would care to admit. Both are marinated in positive thinking. Both are led by strong-willed founders who seek world domination. And both must constantly be on guard against newer, nimbler rivals. Mr Schuller's business empire collapsed, in part, because he failed to think about how to adapt it to a changing and more crowded market. The same may one day be true of some of the Valley's booming tech empires. ■

The Economist 商論



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Growth in America

Careful now

ROYERSFORD, PENNSYLVANIA

Unless wages grow, America's economic blip could become a trend

THE people of Royersford are feeling pinched. In the Main Street Café, in the town centre, a man complains that his pension payments will soon be frozen. Sheena, a waitress, says business is brisk, but rues the "teeny tiny" pay rises she and her friends have received. The worries of those in this Pennsylvanian borough are familiar across America. Although it has chugged along far better than other rich countries, the world's largest economy still fails to instil confidence in its workers. Add to this sour economic data from the beginning of 2015, and some question the strength of the American recovery. Wages hold the answer.

GDP is made up of four things: government expenditure, net exports, investment and consumer spending. One component, government largesse, is doing better. After years of weighing on growth, higher spending is now helping the economy.

The other components tell another story. Start with exports (see chart 1). On a trade-weighted basis, the dollar has appreciated by 13% in the last year. America is not especially exposed to the vagaries of international trade—exports of goods and services equal just 14% of GDP, compared with 26% for the euro zone. But the dollar's recent rise, which makes American products less competitive on world markets, has been so dramatic that problems are emerging. Paul Ashworth of Capital Economics, a consultancy, is expecting a 14% annualised, inflation-adjusted decline in exports over the first quarter of this year. With the euro zone expected to grow by just 1.4% this year, and the Canadian economy also slowing, demand for American wares from important trading partners threatens to be lacklustre.

Businesses are already feeling the pain. A third of the sales of companies in the S&P 500 index come from abroad. Corporate profits fell by 1.6% in the fourth quarter of 2014 and were 6.4% lower than in the same quarter of 2013. As profits have been squeezed, so investment, the third component of GDP, has stalled.

Figures released at the end of March show that orders for "durable" goods—things that last a long time, like industrial machinery—dropped by 1.4% in the previous month. "Core" orders of durable goods (which exclude transportation equipment) have fallen every month since October. And with the oil-price slump, spending on energy projects has crashed. Declining investment in mining will wipe 0.8 percentage points from GDP growth in the first quarter, say researchers at Capital Economics. Steven Ricchiuto of Mizuho Securities, an investment bank, expects corporate investment to drop: "Companies are not in a mood to add to capital stock."

Back to earth 1

% change on previous month*

Sources: Federal Reserve Bank of St Louis; Bureau of Economic Analysis

*Three-month average †Non-defence capital goods

All this sounds bad. However, the American economy lives or dies by what happens to consumer spending, which makes up the lion's share of GDP. If buoyant, it could prevent the economic blip from turning into something more serious. Economists had expected strong consumption growth in 2015: Americans have seen a windfall from a halving of the price of oil and outstanding consumer credit has grown for 42 straight months. Despite that, consumption growth has slipped.

Unusually bad weather earlier this year partly explains what is going on. A freezing winter forced Americans to stay indoors instead of going to the shops. But the biggest thing working against stronger and more sustainable consumption growth is pay. In Royersford's part of Pennsylvania, real hourly earnings fell by 1% last year. Down the road from the café (and past a few vacant lots) in Sweet Ashley's Chocolate, the shop's owner says that she would like to hire, but can only afford to pay the minimum wage. One of her friends has three jobs, one of them full-time, to make ends meet. Across America, median inflation-adjusted wages are no higher today than they were when the financial crisis ▶▶

Far from full capacity

United States

Sources: Bureau of Labour Statistics; Federal Reserve Bank of St Louis; ITG Investment Research

*Health care and social assistance, retail, food and drink services †Three-month moving average

hit (see chart 2).

Economists struggle to explain why wages have not taken off. The most recent jobs report, for March, was muted, but that served to highlight just how robust the data have been over the past two years. The unemployment rate stands at 5.5%, below its historical average. Economists expect that wages should rise faster in such circumstances, since employers have to compete for workers. A research paper from the Federal Reserve Bank of Chicago estimates that, if real wage growth had followed its historical relationship with the unemployment rate, by mid-2014 it would have been 3.6 percentage points higher than it actually was. Three big things, though, have held back pay: changes to America's unemployment-insurance system, the behaviour of firms, and the persistence of labour-market "slack".

America's unemployment-insurance system underwent a big change at the end of 2013. Before then, the average American could get 53 weeks' worth of unemployment benefits; in three states they could get 73 weeks' worth. Congress then decided to make benefits stingier: the average limit dived to 25 weeks, cutting off 1.3m Americans immediately. With nothing to fall back on, the wage expectations of many unemployed people fell, says Iourii Manovskii of the University of Pennsylvania. Employers in some sectors quickly took advantage of this newly cheap pool of workers. A big chunk of the 3m extra jobs created during 2014 were in poorly paid industries (see chart 3).

Even firms in typically well-paying sectors are being tight-fisted with their workers. A recent paper by Mary Daly and Bart Hobijn, both of the Federal Reserve Bank of San Francisco, looks at the problem of "nominal-wage rigidity". The paper argues that when the financial crisis hit, employers found it difficult to reduce the cash value of the wages paid to their staff. (Foisting a pay cut on your entire workforce hardly boosts morale.) Inflation was too low to take a big bite out of real wages by keeping nominal wages flat. Instead, employers fired their least productive workers, keeping the best ones happy. That helps to explain why, counterintuitively, median wages did well even as unemployment shot up. Now, to compensate for the high wages paid to those staff that got through the recession, firms are willing to offer new recruits only low wages. The survivors do not see raises, either.

Pay it forward

Firms may be able to get away with offering measly pay since the labour market still has a lot of "slack" (ie, there are workers on hand to fill additional jobs, should they be needed). The number of part-time workers who would rather be full-timers—so-called "part-time for economic reasons" (PTER)—fell much more slowly than the official unemployment rate following the recession (see chart 4). The same goes for "discouraged" workers, those who want a job but say that there is no point in looking. Though few in number, their involvement—or not—in the labour market can sway wages. Both measures have fallen since the recession ended, but are still much higher than before the crisis.

According to a Chicago Fed paper, the PTER rate is a particularly important determinant of wage levels. It finds that a 1% increase in the PTER rate is associated with a 0.4% fall in real wage growth, even after controlling for the effects of other measures of unemployment. The impact is especially strong for worse-off workers. David Blanchflower of Dartmouth College and Andrew Levin of the IMF found similar results in a paper published in March. When the PTER rate is high, workers may feel unable to ask for higher wages, since what they really want is more hours. Nervousness about asking for more pay may ripple through the labour market, says Daniel Aaronson of the Chicago Fed.

Economists also debate the effect of America's "participation rate", defined as the number of people in work or actively looking for jobs as a proportion of the population over 16. Now at 62.7%, it has been falling for over a decade. It is 3 percentage points lower than in mid-2009.

Some economists argue that a low participation rate is bad for wages. A pool of idle workers, though not officially looking for jobs, stops those in work from pushing for better pay, since they are worried that their employers will replace them. And if wages do rise, those out of the labour force can simply rejoin it, pushing them back down. However, this assumes that low labour-force participation is down to economic conditions. A paper by the Brookings Institution, a think-tank, disputes this. It posits that the falling participation rate among working-age people mainly reflects structural factors, such as technological changes that push some workers out of the labour market permanently.

The Brookings research also tackles the question of why the participation rate fell so sharply around 2007-08. The recession had an impact, but demographic factors may have been more important. About that time, the first baby-boomers turned 62, the minimum age to receive retirement benefits. Using similar reasoning, the paper suggests that the participation rate will fall further in coming years. If its explanation is right, then as the economy improves wages should grow, since there will be fewer workers willing to be sucked back in to the labour force.

If so, the latest data suggest pay could be about to take off. One survey found that 70% of American companies expected to increase wages by at least 3% in the year from March. Pay rises are hitting the headlines: McDonald's boosted the wages of its burger-flippers on April 1st.

Where big business leads, others will follow. The boss of Comfort Keepers, a social-care provider a short drive from Royersford, notes employees at Walmart, a supermarket, are getting a pay rise, a move he may be forced to emulate. David Doyle of Macquarie, a bank, says that the change in average hourly earnings of private-sector workers during the first quarter of this year was the fastest since the recession. If healthier wage data keep coming, interest-rate rises from the Federal Reserve will soon follow. That would suggest that America's economy, despite the blip, is on the way back to normal. ■

Financing American firms

Open the floodgates

NEW YORK

New rules on raising equity make life easier for firms and riskier for investors

IN 1980, Massachusetts banned a new technology company from selling shares to the public there, worried that gullible residents would get swept up by the hype surrounding the venture. In retrospect, that proved a regrettable decision for Bay Staters: the firm in question, Apple, is now the single most valuable public company in the world. Future generations of startups seeking to raise money by selling equity should be given a smoother ride under new rules soon to come into force.

For all of America's perceived openness to innovation and finance, regulators have energetically restricted the ways corporate tiddlers can raise money. The general public has been banned from risky, early-stage investment opportunities, all in the name of consumer protection. That will largely be reversed from May when rules approved by the Securities and Exchange Commission (SEC) on March 25th come into force. These will overhaul the process of raising equity in ways that will make it far easier for firms to finance themselves, even if consumers will have to keep their wits about them.

Under one of the (long-delayed) provisions of the JOBS Act, a compendium of enterprise-boosting laws passed in 2012, companies will be able to raise up to $50m in what is commonly referred to as a "Mini IPO", or initial public offering. Although SEC agreement will still be required, many of the intrusive constraints found in garden-variety IPOs will be waived.

The most controversial aspect of the rules is tied to who may invest in such offerings. Typically access to anything out of the ordinary requires an investor to be "qualified", meaning those with a net worth of $1m or an annual income in excess of $200,000. Now anyone will be able to invest up to 10% of their income in early-stage ventures, a type of investment that makes stockmarket gyrations look dull.

The new rules will galvanise crowdfunding, websites that allow the general public to invest in promising companies. The likes of Kickstarter and Indiegogo already allow people to back small firms, but punters typically get rewarded with early-release versions of their products. Now they could get shares, too.

Plenty of other barriers will be lifted for small firms. Pernickety state watchdogs of the sort that kept Apple out of Massachusetts will lose their say. Companies will no longer have to list on an SEC-accredited exchange, which often comes with onerous disclosure standards. Financial results will have to be filed twice a year, rather than quarterly. And firms can forgo an "independent" audit committee of board members, a costly requirement under the Sarbanes-Oxley Act, which was passed in the wake of Enron's implosion in 2001.

Taken together, observes Sam Guzik, an attorney who represents companies going public, the reforms will make it cheaper for firms to raise money. That should enable faster growth and an easier path to a conventional stockmarket listing.

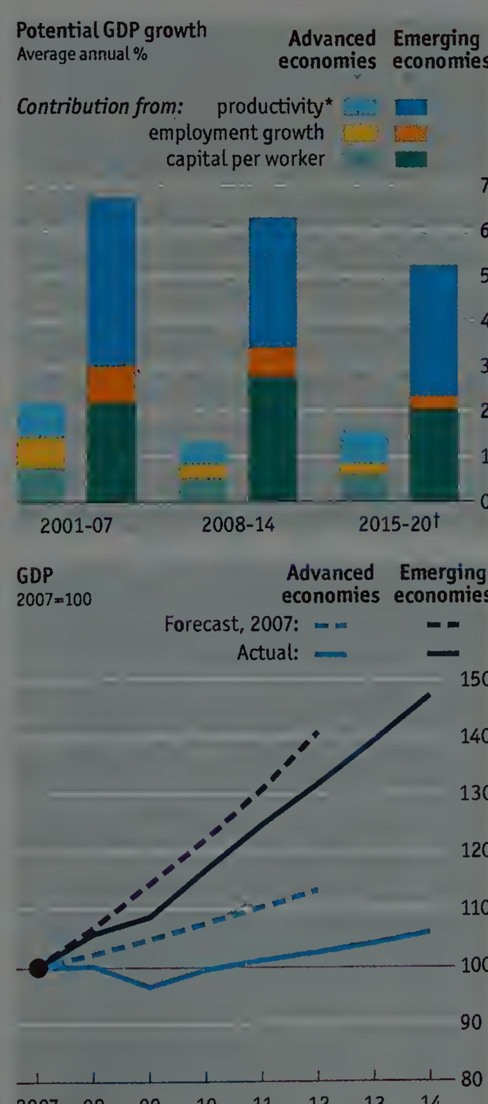
Sceptics worry that crowdfunding venues will become a playpen for fraudsters targeting the poor and credulous. Much the bigger worry is that startups have a tendency to go bust. In Britain, where equity crowdfunding is already thriving, regulators have warned investors it is "very likely" they will get wiped out. For every Apple, in other words, there will be many, many more lemons. That will still sound like a reasonable trade-off to lots of American investors. ■

The global economy

The global financial crisis was a scarring experience for rich economies. A sharp, short-term decline in GDP has given way to a steady erosion in growth expectations. Yet as the latest "World Economic Outlook" from the International Monetary Fund (IMF) explains, emerging economies are also entering an age of diminished hopes.

Potential output is an estimate of an economy's speed limit—how rapidly it can grow before inflationary overheating sets in. It is determined by growth in the labour force, the capital stock and productivity. The IMF reckons that potential growth in advanced economies was already on the decline in the years before the crisis, thanks to weak productivity growth and ageing workers. The crisis then squeezed investment, amplifying these problems. Potential annual growth, which averaged 2.2% in 2001-07, fell to 1.5% in 2013-14.

The IMF reckons potential growth should rebound a bit in the rich world in coming years. But emerging economies face a more persistent slowdown. Demography is catching up with some of them: China's working-age population is already declining. Productivity growth will slow as the scope for catch-up growth between rich and poor countries continues to narrow. Economic disappointment, it seems, is an increasingly global affair.



Source: IMF *Total factor productivity †Forecast

Financial secrecy

Cracking the shells

A hedge fund becomes an accidental hero of anti-corruption campaigners

"VULTURE" funds, which chase distressed borrowers for payment of outstanding debt, have few friends outside finance. Occasionally, though, their hunt for profit aligns neatly with calls for greater financial openness by campaigners, winning the rapacious funds unlikely admirers. So it has proved as Elliott Management looks to enforce court rulings demanding that Argentina cough up $2 billion it owes to the hedge fund. A collateral benefit of the fund's hunt for assets is that it has put a crack in the wall of secrecy around American shell companies, which are among the world's most impenetrable and thus often used for nefarious purposes.

The case involves $65m suspected of having been embezzled and laundered abroad by Lazaro Baez, a building tycoon with ties to Cristina Fernández de Kirchner, Argentina's president, and her late husband (and predecessor), Nestor. Elliott joined the sleuthing, its logic being that any stolen money was misappropriated state funds and could therefore be grabbed to satisfy judgments in its favour.

The money trail led to Nevada, home to 123 brass-plate firms that Elliott suspected of being linked to the alleged fraud. But piercing the corporate veil in the state is far from easy. Its record-keeping requirements are minimal even by American standards.

Elliott sued in Nevada for information on the shell companies from their agent, MF Nevada, and, by association, Mossack Fonseca, the Panamanian law firm understood to be MF's parent. Even if no records were held in Nevada, Mossack could be ordered to disclose what was on file in Panama or a third jurisdiction, Elliott hoped.

MF Nevada claimed, implausibly, that it was independent of Mossack. In a series of legal skirmishes, Elliott established numerous links between MF and Mossack: for instance that MF sets up Nevada companies exclusively for Mossack's clients and that the employment contract of MF's sole employee was signed by Mossack's bosses.

Satisfied that MF was an "alter ego" of Mossack, a judge recently ruled that Mossack was subject to the jurisdiction of American courts and had to comply with the information subpoena. This was a big win for Elliott—and for anyone wanting to know more about shell companies. America is on some measures less compliant with anti-money-laundering standards for corporate vehicles than any other country.

The ruling will also increase scrutiny of one of the biggest purveyors of such vehicles: Mossack is an industrial-scale incorporator of anonymous companies. Shells it helped set up (but is not legally liable for) have been linked to tax evaders and kleptocrats. Mossack says it does not advise clients on the use of companies it forms, and that "we have never been investigated for any crime, including money-laundering."

Elliott is not alone in trying to penetrate the murk, but its combination of money, tenacity and legal nous is rare. The fight is not over, however. If the relevant records are in Panama, a country with strict secrecy laws, they are unlikely to be produced in a hurry. Mossack has challenged the alter-ego ruling. The case will now move to a federal court. Separately, Elliott has won an order in the Seychelles, requiring Mossack to provide information on firms there linked to the Nevada entities. But the law firm is yet to hand over any documents.

Elliott is confident it can build a clear picture of the alleged fraud and use it to claw back some of what it is owed. Its efforts have a collateral benefit, too. Argentina's elites are no longer universally hostile towards the firm, some of them applauding its fight to expose the corruption of political and business rivals. ■

Cash in Argentina

Low bill

BUENOS AIRES

A government in denial over inflation

ON MARCH 26th Argentina's president, Cristina Fernández de Kirchner, announced a new 100-peso note honouring the Mothers of the Plaza de Mayo, a group whose children were "disappeared" during Argentina's military dictatorship. The colourful note got raucous applause from Ms Fernández's clique. Others are less impressed. What the country needs, three private Argentine banking organisations argued in a letter to the Central Bank on April 1st, is not a new 100-peso note—the country now has three—but a more valuable one.

Over the past decade the peso has tumbled and inflation, the official statistics on which have been manipulated for years, has increased sixfold. Despite these drains on Argentines' purchasing power, Ms Fernández has refused to allow a higher-value banknote. Today, 100 pesos buys a mere $11 at the official exchange rate. It fetches only $8 on the black market, which flourished after 2011 when Ms Fernández throttled foreign-currency dealings.

Wallet-buster

This erosion of the peso's value means that banks must handle ever-growing volumes of cash. Their lobby groups complain this makes business unwieldy and unsafe. ATM machines are hard to keep stocked, since their capacities have remained the same even as the average withdrawal has increased from 380 pesos in 2008 to 1,500 pesos today.

Things are equally inconvenient for consumers, who tend to make even big purchases in cash. Some do so to shirk taxes. Others prefer to keep their savings stashed under mattresses and in freezer boxes than to make deposits in the banking system, which crashed during Argentina's 2001 financial crisis. Properties, cars and big events such as weddings are commonly paid for with paper notes.

Such transactions, always cumbersome, are becoming ridiculous. Before the government stemmed access to foreign currencies, many big purchases were transacted in dollars, meaning a smaller pile of notes. Today, says Axel Brostrom, the boss of Binswanger Argentina, a property group, the volume of pesos needed to buy even a small apartment cannot be carried on foot. Many choose armoured trucks for safety. Once the vehicle arrives at the site of the sale, bricks of pesos are shuffled inside using duffel bags. Counting the cash can take up to four hours. For commercial deals it can take even longer.

Argentines will probably be counting their cash bundles for some time. With only eight months left in office, Ms Fernández is unlikely to allow a more valuable banknote. To do so would acknowledge that when it comes to inflation, she has long been counterfeiting the facts.

Free exchange | Outlaw economics

Policies to shift income from rich to poor may prove less effective than imagined

IN A world of inequality the egalitarian thief is an attractive character. From England's Robin Hood to America's Jesse James and Mexico's Pancho Villa many countries lionise brave outlaws who take from the rich and give to poor. Economics, in its down-to-earth way, seems to support their cause: since the cash-laden tend to save more, diverting income to penniless people who will spend it immediately should boost consumption, and GDP. The electoral calculus of redistribution appears favourable, too. The best-off are small in number, so taxing their mansions seems likely to win more votes than it loses. But those who fancy taxing the wealthy should tread carefully. Designed badly, such policies could do more harm than good.

The idea that redistribution could help spur growth has long attracted adherents. In 1920 Arthur Cecil Pigou argued* that an annual transfer of resources from the "relatively rich to the relatively poor" would increase national output. Pigou discussed three uses for income: consumption or investment by the rich, and consumption by the poor. Shifting purchasing power to the poor would do little to hurt rich folks' spending. The outcome of soaking the rich, decreased investment, would be outweighed by purchases of better food, clothing and education by the poor. Thus redistribution would boost output.

Pigou's argument rests on the idea that poor families would spend more if they had the means, and that the wealthy would be able to smooth consumption if they suddenly lost income. To investigate whether this assumption holds, Greg Kaplan and Justin Weidner of Princeton University and Giovanni Violante of New York University used huge microeconomic datasets to paint a picture of household income and wealth across eight advanced economies. For each household they totted up income from salaries, public handouts and private transfers such as alimony payments. They also measured liquid wealth: cash in bank accounts, along with bonds and stocks that are directly held and so could be quickly sold. The researchers were looking for families that lacked a buffer of liquid assets (or credit facilities) to offset short-term changes in income. This group, whose consumption has to adjust as income changes, are those that live "hand to mouth" and would be likely to spend most from a government windfall.

But the term "hand to mouth" is not as straightforward as it seems. The data show that the median American holds some liquid wealth in bank deposits, as well as illiquid wealth (retirement accounts and houses, net of mortgage debt), but hardly any shares or bonds. Surprisingly, although around 30% of households live from payslip to payslip, two-thirds of these cash-poor people have sizeable illiquid wealth. They do not fit neatly into the Robin Hood bifurcation between rich and poor: their cash barely covers outgoings but they sit on large illiquid assets.

Housing debt is one reason people end up short of cash. Focusing in on American homeowners, the researchers find that of those with small mortgages, only 20% live hand to mouth. But once total debt approaches the value of the house, a much higher number—close to 50%—are income-constrained. Age is also a factor. Although the likelihood of genuine poverty tends to fall with age as workers build up buffers, the chances of being wealthy but cash-strapped peak around the age of 40.

These findings matter because cash shortfalls affect behaviour. Using another dataset that tracks 5,000 American households, the researchers measure the reaction to short-term income shocks between 1999 and 2011. The results confirm Pigou's hunch. Those with lots of liquid wealth spend just 13% of an unexpected windfall; those living hand to mouth spend 24%. The wealthy-but-income-constrained react most, spending 30% of any windfall, suggesting they are even more cash-strapped. That chimes with a study by James Cloyne of the Bank of England and Paolo Surico of London Business School, which found that Britons with large housing debts react sharply when taxes are raised or cut. In other words, taxing those with large but illiquid assets could cause more of a fall in spending than previously expected.

Growing old conservatively

If policymakers need to draw more nuanced distinctions between rich and poor, they also ought not to assume that hard-up citizens will support redistribution. In a working paper, Vivekinan Ashok and Ebonya Washington of Yale University and Ilyana Kuziemko of Princeton University explain that support for redistribution should, in theory, rise the more a worker's earnings fall short of a country's mean income. Yet American attitudes have shown the opposite pattern: support for redistribution has remained flat or fallen as inequality has risen.

Much of this is down to age. Those below 40 follow the expected template: support for redistribution rises in line with inequality. The over-65s are different, perhaps because there are fewer in the "cash-poor" category. In the 1970s, when surveys began, they were more supportive of redistribution than the rest of the population. By the mid-2000s they were much less in favour, doubtless fearing that help for the poor would cut health benefits.

Those twiddling the fiscal dials should mull on these findings. They suggest that the benefits of a fiscal stimulus package would be lower if targeted on the basis of income: short-term largesse should be used on the wealthy, too. It also means redistribution from rich to poor may not be a one-way bet: in particular taxes on the wealthiest should be phased in slowly so they can liquidate assets rather than cut spending. And politicians betting on their Robin Hood credentials should be wary of greying voters. They may be more inclined to back the Sheriff of Nottingham. ■

* Studies cited in the article can be found at www.economist.com/tax15

Economist.com/blogs/freeexchange

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Expanding the internet

Sky-Fi

A number of companies have bold ambitions to use satellites, drones and balloons to bring the internet to the unconnected

EVER since the early 1990s, when it moved out of universities and was embraced by the general public, the internet has grown relentlessly. Only 2% of the world's population was online in 1997. By 2014 the proportion had risen to 39%, or about 3 billion people (see chart below). But that still leaves another 4 billion who live an internet-free existence.

Most of the bereft are in the developing world, where only 32% of people are online, compared with 78% in rich countries. And those numbers disguise plenty of local variation. Just 19% of people in Africa were internet users in 2014. Like most infrastructure, the internet is easiest to provide in cities. People scattered in the countryside—even those in rich countries—must often do without.

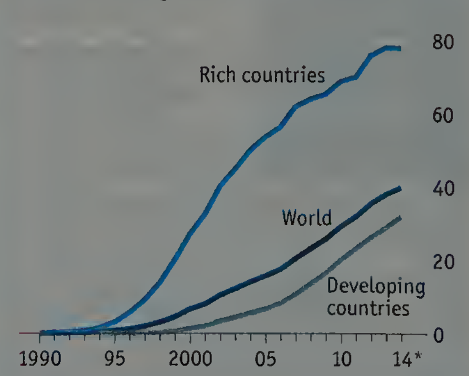
Yet that may be about to change. Four technology companies are pursuing ambitious plans that could, eventually, provide reasonably fast, high-quality connections to almost everyone on Earth. Google dreams of doing so with a globe-circling flock of helium balloons. Facebook's plan requires a fleet of solar-powered robotic aircraft, known as drones. And two firms—SpaceX, a rocket company, and OneWeb, a startup based in Florida—aim to use swarms of cheap, low-flying satellites. By providing an easy route to the internet at large, local telecoms firms should be able to provide high-speed, third- or fourth-generation mobile-phone coverage to areas far away from the big cities.

The top-down approach makes sense, for the familiar terrestrial technologies are not well-suited to covering the globe with lots of fast connections. Providing the sort of cabling common in rich cities to every home on Earth would be prohibitively expensive. Mobile-phone masts do away with much of the wiring, but the masts themselves still require "backhaul"—a high-bandwidth connection to the internet. As a result, fast mobile networks are far from ubiquitous even in rural parts of the rich world. They are almost unheard of in poor-country villages.

A satellite, however, can see (and be seen from) huge chunks of the planet's surface. In theory, that allows the provision of data to millions of people at once. And satellite internet services are already widely available, but prices tend to be high, bandwidth limited and data allowances small. Many existing communications satellites fly in geostationary orbits, some 36,000km high, where they stay over a fixed point on the Earth's surface. This has two unavoidable drawbacks. The strength of a radio signal falls off rapidly with distance, so beefy transmitters and good power supplies are needed to contact them. The second problem is called latency, which is a delay in the signal. It can take at least half a second for a request for, say, a webpage to travel from the ground to the satellite and back down again, and then the page itself to make the same trip in reverse. That may not sound like much, but it is a tenth or less of the speed of a wired connection, even before other internet latencies. "No one uses a geostationary satellite and says 'I've solved my problem for ever,'" says Greg Wyler, the founder of OneWeb.

Wider world web

Individuals using the internet, %



Sources: World Bank; ITU *Estimate

Lower they go

Mr Wyler's firm plans to launch 648 small, relatively simple satellites into much lower orbits of 1,200km. This will provide a latency similar to that offered by a fixed-line connection. And it will allow the use of much less-powerful aerials on the ground. OneWeb will offer its services to airlines and military customers, as well as emergency services and disaster-relief organisations, although it plans to attract individual customers, too, through deals with local telecoms firms. Because a single satellite will be able to provide backhaul to dozens of villages at a time, Mr Wyler hopes that local operators will be able to afford to build phone masts or internet base-stations in rural schools, village centres and the like. In the most remote areas, the masts might be powered by solar panels. Those who are still disconnected in the rich world could sign up, too.

But although low orbits offer much bet- ▸▸

ter latency, they are also more complicated. Unlike geostationary satellites, low-flying ones move relative to the ground, so hundreds of them would be required to provide reliable coverage across the entire planet. When one satellite disappears over the horizon, radio equipment on the ground needs swiftly to connect to another one in view without the user noticing (rather as mobile phones do when they move out of the range of one mast and into the range of another). Doing that successfully requires a lot of tricky signal processing, says Mr Wyler. It is only in recent years that aerials and chips have become so sophisticated and cheap enough to make such a system possible. OneWeb is helped in this by Qualcomm, an American firm that makes chips for mobile phones and has the necessary expertise—and is one of its early investors.

Mr Wyler is not alone in backing low-flying satellites. Elon Musk, a billionaire co-founder of PayPal whose firms now include Tesla, a maker of electric cars, and SpaceX, wants to do something similar. His constellation would orbit at a similar altitude, but the satellites would be slightly more sophisticated than the sort that Mr Wyler intends to fly. Besides providing the internet to the unconnected, they would serve another market, too. Mr Musk has pointed out that light travels more than 40% faster in space than it does inside a fibre-optic cable. His low-flying satellites could offer faster transmission of data over long distances than a cabled connection could on the ground. For time-sensitive information, such as that used in some financial trades where split seconds count, such a service might be highly appealing.

Mr Musk and Mr Wyler both seem to have the technical expertise to make these new satellite services a reality. One of Mr Wyler's existing firms, O3B, specialises in providing satellite-internet to oil rigs, cruise ships and other businesses with remote operations. OneWeb has already been granted a slice of precious radio spectrum in which to transmit its data (SpaceX has not, although there is a rumour that it hopes to work around this by communicating with lasers instead.) Mr Musk is an experienced disrupter of technological industries, and SpaceX's rockets offer some of the cheapest launch prices. With hundreds of satellites to put into orbit, that would keep his outgoings down.

Indeed, costs will ultimately determine whether such projects can be successful. SpaceX and OneWeb's potential customers in poor countries will not be able to pay much for their connections. Both firms hope to take advantage of cheap, off-the-shelf parts, rather than the expensive bespoke electronics typically employed in big satellites. Economies of scale should also help. OneWeb reckons its hundreds of satellites might cost just $350,000 each, with a total cost for the project of around $2 billion. Mr Musk's system could end up costing around $10 billion. Both will have to fight off competition from incumbent satellite operators such as Intelsat, which are busy launching new, more potent geostationary satellites.

There will also be rival technologies in the air. Yael Maguire, the engineering director of Facebook's Connectivity Lab, thinks that satellites are inherently inefficient: the world is 70% ocean, for one thing, so satellites will spend some of their time flying over places where no one lives. And even among poor countries, rudimentary connectivity is often available: about 85% of the world's population has access to at least a second-generation mobile-phone network, he says, which can provide limited access.

Send in the drones

So, rather than trying to provide global coverage, Facebook plans to plug specific gaps in the existing infrastructure. Despite its misgivings, it is investigating the use of satellites, as well as doing deals with mobile operators in poor countries to provide basic access to a small number of sites free for users of its Internet.org app. But Facebook's most ambitious project is for a fleet of solar-powered, propeller-driven drones that will fly at altitudes of 20km or more, which is well above the level used by commercial aviation, beaming an internet connection down to users on the ground.

The drones will be able to communicate with each other using lasers, relaying data until it can be passed to a ground station and on to the rest of the internet. The firm has already carried out flight tests in Britain, where its drones are built by Ascenta, a firm that Facebook bought for $20m in 2014.

Being solar-powered, the drones will be able to stay aloft for months at a time, coming down only for repairs and maintenance. That downtime offers another benefit: drones can be upgraded a lot more easily than a satellite, which, once launched, is stuck in space. Although their "footprint" of coverage will be much lower than even a low-orbiting satellite, drones can circle above one specific location that lacks connectivity. And, says Mr Maguire, launching a drone is always going to be cheaper than putting a satellite into orbit.

Google has also been experimenting with drones. But its chief idea is perhaps the simplest of all. "Project Loon"—so called because, when it was first suggested, the idea seemed crazy—is to gird the Earth with a swarm of thousands of helium-filled balloons. Each will carry a solar-powered wireless transmitter and, like Facebook's drones, will be capable of relaying traffic from other balloons. In contrast to the rival companies, which are mostly concentrating on providing ways to deliver the internet to mobile-phone towers or Wi-Fi relays on the ground, Loon balloons may be used as flying base stations, capable of talking directly to mobile devices on the ground. In February 2014 the record duration for a flight was 50 days. Google's latest models are capable of remaining airborne for six months or more.

Unlike Facebook's drones, the balloons will not have engines. But that does not mean they cannot be steered. The winds in the stratosphere, where the balloons will fly, are, as the name suggests, stratified. The balloons will have the ability to change altitude, letting them hitch a ride on winds blowing in different directions at different speeds. A constantly updated computer model will keep track of each balloon, directing their trips around the world so that there will never—or only very rarely—be holes in the coverage.

By taking advantage of different wind speeds, the balloons should be able to minimise the time they spend over uninhabited areas, drifting in slow winds over

One day Google's balloon will go up

populated areas while rising or falling into faster currents to speed them across oceans or deserts. "We have 30 years of wind-speed data to do this with," says Mike Cassidy, the man in charge of the project. And the balloons themselves will be able to measure wind speed, improving the ability of Google's computers to marshal them around the world (and giving the firm the most comprehensive set of wind data held by any organisation—which it has promised to share with weather forecasters and climatologists).

It all sounds grand on paper—perhaps too grand. The satellite projects, in particular, are not a new idea: in the late 1990s, during the heady days of the technology boom, several companies planned something similar, but none of their plans came to fruition. Yet the internet is a much more important part of the global economy now. The hope is that demand for the myriad services available online will continue to grow strongly, helping the business case.

Rules and regulations

Regulatory approval will also be crucial to the success of the projects. Facebook must contend with regulators in some countries that heavily restrict the use of drones. And Google will need to develop an infrastructure capable of launching and retrieving what could amount to hundreds of balloons a day. Satellites must be disposed of at the end of their lives, whether by boosting them into a stable "graveyard" orbit or having them burn up in the atmosphere. Drones and balloons can crash, so safety regulators will need to be persuaded that the risks are acceptable.

The involvement of Google and, especially, Facebook, which run some of the most popular sites on the web, has caused some raised eyebrows. Facebook's Internet.org app allows mobile-phone users to connect to the internet without incurring charges. But only a handful of websites can be visited, one of which is Facebook itself, raising concerns about attempts to lock customers in. Perhaps to allay such suspicions, Mr Maguire says that Facebook is considering making its drone designs available for anyone to copy, much as the firm did in 2011 with its designs for advanced computer servers.

The companies are optimistic that they will succeed in spreading the internet: all say that telecoms firms in poor countries are enthusiastic. SpaceX reckons its satellites will be ready in five years. OneWeb thinks it can open for business in 2019. Facebook will not specify a date, other than saying that its drones could start flying commercially "fairly soon". And Google expects to begin commercial trials of its balloons next year. If any of them succeeds, then the idea of the internet as a "global village" will be more than just a quaint metaphor. ■

Medical robotics

To the point

BEER-SHEVA, ISRAEL

Researchers find ways to automate the insertion of needles

AROUND one in ten Americans is a trypanophobe, stricken with a dread of needles. Some may have inherited a tendency to faint when jabbed; others develop the phobia after a painful injection or a botched blood sample. Sadly, their fears are occasionally well founded.

Central venous catheters, or central lines, are commonly used with critically ill patients to administer drugs, fluids, food or blood products close to the heart. However, placing needles inside veins deep in the body is notoriously difficult. Some 15-30% of attempts suffer complications, mainly punctured arteries that can lead to infection (around 250,000 cases in America annually), but also bleeding, collapsed lungs and even cardiac arrest. Failure rates in children can be higher still. A study in 2013 by Stanford University School of Medicine and Lucile Packard Children's Hospital, found that over half the attempts to place a central venous catheter in children failed on the first go.

Portable ultrasound can be used to produce an image of the position of blood vessels to help insert needles. This has reduced errors, but the technique still requires a highly trained physician. Now a collaboration between Cincinnati Children's Hospital and Ben Gurion University of the Negev in Israel hopes to automate the entire process. A team led by Hugo Guterman, a robotics expert, has built a prototype device that uses ultrasound, machine vision and a robotic needle-dispenser to make placing a central venous catheter a push-button affair.

The operator lays the wireless device on a patient's arm, leg or neck and views an ultrasound image on a nearby computer screen. The system then identifies the centre and edges of each blood vessel, as deep as 15cm inside the body and as narrow as 0.5mm in width, making it particularly useful for treating children. Using a joystick, the operator aligns a target icon over a vein. The system uses a tracking algorithm to keep the blood vessel aligned. When ready, the operator simply presses a button to insert the needle.

The operator does not have to be a doctor. Dr Guterman envisages his device being used by most clinical staff, including paramedics. In a demonstration, your medically untrained correspondent used the prototype to carry out a simulated needle placement in under two minutes—less than a quarter of the time that a doctor typically needs for a manual procedure. The system will not deploy the needle if it cannot sense a suitable vein at the target location, minimising complications.

The prototype is designed to place the special needles required for paediatric and adult central lines, but Dr Guterman expects the technology will also work well for other needle-based procedures. These could include breast, prostate and liver biopsies, some cardiac procedures, and the precise delivery of radiotherapeutics or anti-cancer drugs to tumours.

The system has already undergone successful testing on live, anaesthetised pigs and is now heading for pre-clinical testing and regulatory approval. But America's Food and Drug Administration is understandably wary of any fully autonomous medical devices. "Because it is an invasive procedure, you have to let a human make the final decision," says Dr Guterman.

The ultimate barrier to adoption will be persuading doctors that a robot can do a good job. Dr Guterman is not alone in thinking that it can. A number of startups are also developing robots to insert intravenous needles. Some use ultrasound, others rely on infra-red vision. As such robots can fire needles through skin and flesh much faster than a human hand can, it causes less damage to tissues and should mean less pain, too. Trypanophobes aren't the only ones who would welcome that. ■

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Contemporary art

New on the Rialto

This year's Venice Biennale will be even more surprising than usual, thanks to its Nigerian-born curator

OKWUI ENWEZOR, the artistic director of the 2015 Venice Biennale, which opens next month, speaks the slippery, abstract language so common to high-flying contemporary-art curators. An exhibition, he declares, is "a project that will be located in a dialectical field of references and artistic practices". Anyone wanting a clear sense of what he thinks should look at what he does rather than what he says.

For 30 years Mr Enwezor has been a curator and critic, intent on stretching the canon of traditional Western contemporary art and testing what it might become. The youngest son of an intellectual Igbo family, at 18 Mr Enwezor left Nigeria for New York where he met a number of African-American artists, including Glenn Ligon, a favourite of Barack Obama.

Seeking a way to make his mark, in 1994 he founded *Nka*, a journal about contemporary African art. Shortly after, Mr Enwezor got his first big break, curating the fledgling Johannesburg Biennale. It won him, at 35, one of Europe's leading curatorial jobs, overseeing Documenta, a prestigious exhibition that takes place in Kassel in Germany every five years. Now he heads Haus der Kunst in Munich, a cutting-edge museum that is a natural springboard for Venice.

The Venice Biennale is made up of over 80 national shows and a central exhibition curated by the artistic director. Whereas the national pavilions are often rich with explicit geopolitical connotations, the Biennale's own sprawling show has generally shunned politics. Not this year. Titled "All the World's Futures", Mr Enwezor's exhibition will include work by 136 artists from 53 countries—much of it concerned with the "politics of the image".

Mr Enwezor has a reputation for being a left-wing martinet. In the coming months, his politics, as well as his aesthetics, will be put to the test as he mingles with the millionaires who patronise the Biennale and the defiant artists that he has invited to mock the global financial establishment.

Seasoned Biennale visitors will not be surprised that artists are intent on portraying their disapproval of the 1%; two years ago a British artist, Jeremy Deller, created a mural in which a giant William Morris, a Victorian social reformer, hurled a super-yacht belonging to Roman Abramovich, a Russian oligarch, to its doom. Mr Enwezor has invited Mr Deller back; this time he'll create an installation honouring factory workers from the 1860s.

The forces behind the global economy are one of Mr Enwezor's obsessions. This year, in the exhibition's grandest room at the Palazzo delle Esposizioni, actors will read Karl Marx's "Das Kapital" out loud: all four volumes, including the footnotes. Other works will act as counterpoints to Marx: Andreas Gursky's record-priced, large-scale photographs of stock exchanges and, at the other end of the political spectrum, Hans Haacke's controversial opinion polls, which have, for over 40 years, asked the public questions about the politics and finances of individual art-world patrons.

The show's second main theme derives from Mr Enwezor's zeal for discovering and promoting the work of unknown young artists, especially those from Africa and the African diaspora. One of the notable recent developments in the art world has been the great commercial success of artists of African descent, who are represented by powerful dealers in London and New York, such as Larry Gagosian, David Zwirner, Victoria Miro and Luhring Augustine. Serious contemporary-art buyers increasingly feel that their collections are lacking if they do not include carefully chosen works by leading black artists.

Mr Enwezor has invited a number of well-known black names, such as Mr Ligon, Chris Ofili, Wangechi Mutu, Ellen Gallagher, James Kerry Marshall, Isaac Julien, Theaster Gates and Lorna Simpson. They all explore the history of race relations and the politics of beauty, putting their own particular stamp on contemporary art.

A new generation of artists who live and work in Africa will also be on show. Ibrahim Mahama, a 28-year-old from Tamale, Ghana, will have the largest work in the Biennale. Along a 200-metre stretch of wall on the outside of the nearby Arsenale will be a giant tapestry made from brightly patterned fabrics and the burlap sacks that are used to transport coal and the other commodities that form the backbone of the Ghanaian economy.

Found materials like this are also an important feature of the work of many artists in Mozambique, where 15 years of civil war left behind tonnes of armaments. Gonçalo ▸▸

Mabunda is one of several who use decommissioned weapons to make "gun throne" sculptures (another is Cristovao Canhavato—also known as Kester—whose work is one of the mainstays of the African collection at the British Museum).

Traditional artistic materials like paints and pencils are likely to be used for graphic ends. Nidhal Chamekh, a young Tunisian, will show his "martyr drawings", which depict flayed and dissected bodies in frightful anatomical detail. Meanwhile, Karo Akpokiere, from Nigeria, will present a series of droll paintings inspired by the fast-moving pop culture that has emerged in Lagos, Africa's most populous city. Defiant, satirical and full of energy, these works embody the new artistic forces that Mr Enwezor is bringing to the world's biggest art exhibition. ■

Africa's natural resources

Blood earth

The Looting Machine: Warlords, Tycoons, Smugglers and the Systematic Theft of Africa's Wealth. By Tom Burgis. *PublicAffairs; 319 pages; $27.99. William Collins; £20*

AFRICANS ask many questions about what ails a continent that abounds with natural riches yet suffers, too, from greedy rulers, bad government and entrenched poverty. The replies they get range from the outright racist to the climatic (countries in the tropics suffer from more parasites and disease than in more temperate latitudes) to the political, with many blaming colonialism or so-called neo-colonialism for the continent's woes.

For Tom Burgis, a journalist with the *Financial Times*, the problem is, paradoxically, Africa's wealth of natural resources. He is not the first to write about countries with the "resource curse". Nor does his book add to the copious academic literature on the subject. But Mr Burgis sees Africa—with a third of the Earth's mineral deposits and some of its weakest institutions—as being particularly vulnerable to the predations that arise from the combination of mineral wealth and poor governance.

"The Looting Machine" is the fruit of Mr Burgis's many travels through Africa, from bars in Port Harcourt to gleaming new office towers in Luanda, as well as his work as an investigative journalist. He presents a lively portrait of the rapacious "looting machine" in which international mining companies contrive with local African elites to strip the continent of its resources. In doing so he is not short of anecdotes (nor copious footnotes). In Angola he points to a small group that controls the state and has amassed great wealth. In parts of Nigeria these resource rents are shared between an elite that controls the state and armed warlords who held it to ransom through blowing up pipelines and kidnapping oil workers.

"In the place of the old empires are hidden networks of multinationals, middlemen and African potentates," Mr Burgis says. "These networks fuse state and corporate power. They are aligned to no nation and belong instead to the transnational elites that have flourished in the era of globalisation."

Yet for all the rhetorical flourish, Mr Burgis fails to explain why some states with bountiful natural resources manage them in ways that deepen democratic institutions and benefit the poor. One need not look as far as Norway for this. Botswana gets a mention for its economic dependence on diamonds (it is a major producer), but less so for its democratic traditions, excellent health and education systems and stability.

"The Looting Machine" reads partly like a mystery thriller and partly like a court submission, with its detailed descriptions of the corporate connections between Chinese companies with interests across the continent. Mr Burgis offers a rich collage of examples showing the links between corrupt companies and African elites. But he fails to argue convincingly that natural resources are the primary, or even a major, source of Africa's troubles. ■

Tapping away at Africa's wealth

John Aubrey, fictional diarist

A man for all seasons

John Aubrey: My Own Life. By Ruth Scurr. *Chatto & Windus; 518 pages; £25*

JOHN AUBREY (1626-97) was many things: antiquarian, biographer, topographer, naturalist and collector of etymologies, folklore and old wives' tales. Sadly, he was not, like his contemporary Samuel Pepys, a diarist. Now Ruth Scurr, a Cambridge academic, has put that right. Drawing on his manuscripts and letters, she has fashioned, as chronologically as possible, an autobiography in the form of the diary that Aubrey never wrote. It fits him perfectly. Aubrey made himself so present in his pages, and wrote so informally—so "tumultuarily", as he liked to say—that Ms Scurr's invention feels entirely natural. She has modernised his spelling and stitched in clarifications, but on the whole this is Aubrey speaking.

Aubrey published only one book, complaining to the end that so much remained unfinished—"upon the loom", as he put it. Now the reader can watch him at the warp and weft—observing, thinking and asking questions. Sea shells on hill tops, for example: was the world once covered in water? "Ovallish" pebbles: were they once soft? "Is it possible to find the latitude of a place by a quadrant in the dark without sun or stars?" Travelling the country, he sampled, sniffed and tasted: on Dundery Hill "I noticed that there was some weed or flower in the ditch…My nose was affected with a smell that I knew but it did not come immediately to mind…To my taste it seems to have *aliquantulum aciditatis* and is perhaps vitriolate."

What fascinated him most, though, was England's past, its ancient remains, traditions and stories. He talked to everyone: "I do not disdain to learn from ignorant old women." And when he missed a chance he groaned. Old Mr Beeston, for example, who had known the poets he was writing ▸▸

about: "I am too late! Old Mr Beeston has died…Alas!Alas! Those details have gone with him into oblivion…" It was lonely work, not much rated then. Despite his election to the newly founded Royal Society, he called himself merely "a scurvy antiquary". At the same time, he could not help believing in what he did. In the midst of a survey of Wiltshire, he confessed to himself: "I feel as though I am working under a divine impulse to complete this task: nobody else will do it, and when it is done no one hereabouts will value it: but I hope the next generation will be less brutish."

Aubrey's "diary" is partly a lament for England. Ruins lay everywhere: the monasteries dissolved by Henry VIII, the castles blown up in the civil wars, the stained glass smashed by Puritan iconoclasts. Describing a friend who stopped bung holes in beer barrels with old monastic manuscripts, he felt his "eyes prick with tears at the thought". And yet he is filled with an irrepressible zest—from his wonder at the stone circles at Avebury to his delight in the Yorkshire women who "still kneel on the bare ground to hail the new moon every month". Ms Scurr has done him proud. ■

Reading

Cabinet of curiosity

Curiosity. By Alberto Manguel. *Yale University Press; 377 pages; $30 and £18.99*

ALBERTO MANGUEL has a curious mind, quirky, inquisitive and fascinated by detail. A literary omnivore, he owns 30,000 books and boasts an output of writing to match. For 35 years Mr Manguel has published on average a book a year. Though he ranges across many genres, he is best known for artfully arranged miscellanies about books and libraries.

Reading Mr Manguel is like taking a city walk or an unhurried meal with an erudite, cosmopolitan friend. An Argentine diplomat's son, he knows many languages, and he lived in many places before settling in France. Few cultures or historical periods are closed to him. He hops knowledgeably and divertingly from topic to topic. Yet he never strays far from his true interest, reading itself.

As befits a miscellany, "Curiosity", his latest work, is really many books in one: ruminations on life's big questions, answers from the great books of the past, a loving homage to Dante and thoughts on curiosity itself. Those last two topics work much better than the first two.

Each of the 17 chapters opens with a big unhedged question, such as "How Do We Reason?" Or "What is an Animal?" and "What Are We Doing Here?" Those are the sort of questions that scientists and philosophers either spend a lifetime working on or teach their students not to ask. Nobody should expect answers and Mr Manguel does not promise them

His questions instead prompt suggestive insights on the relevant theme from the great books of the world: Homer, Plato, the Sanskrit Vedas, the Hebrew Talmud, the Christian Gospels, the Persian and Arabic classics. Mr Manguel offers also his own thoughts.

The topics to which his big questions lead him include exile, illness, climate change, pets, cultural barriers, social identities, Auschwitz, Hiroshima, financial greed and death. Some of those topics are too modern for the ancients to have anything direct to say. Others are timeless. But to say much that is striking, new or true about those would take aphoristic gifts or an astringency of mind that Mr Manguel does not claim to possess. To call him today's Montaigne, as one of the jacket quotes has it, is pure puffery, as he would be the first to acknowledge.

What saves "Curiosity" from trying to say something about everything and gives it a shape it would otherwise lack is the author's love of Dante. Fronting each chapter is an arresting late 15th-century woodcut illustrating one or other of the Italian poet's imaginary encounters with the dead in hell, purgatory and heaven from the "Divine Comedy".

Mr Manguel picks episodes that shed light for him on his chosen themes. But that is not why his Dantean passages sparkle. Rather they show us on their own account what generous, attentive reading can do. Thanks to finely tuned responses, backed by ample quotation, Mr Manguel reaches back seven centuries and almost takes Dante by the hand.

Although more an exercise in curiosity than a study of the idea itself, Mr Manguel's book has illuminating things to say about that too. As a mental disposition curiosity, he tells us, has had a double reputation as virtue and vice. It betokens both care with detail, love of truth and modesty about what we can't know or shouldn't ask but also pedantic fussiness, snooping and intellectual pride.

A different aspect is "the curiosity", which has a fine chapter to itself called "How Can We Put Things in Order?" In the 16th, 17th and 18th centuries, antiquarians collected odd artefacts and natural objects they found interesting, strange or simply appealing—for example, minerals, sea creatures, small carvings from far lands. They were exhibited, in no special order, in "cabinets of curiosities". Clever fakes shared shelf space with genuine finds.

Such items were curious in having no obvious place in the settled cosmic inventory of the old medieval world. Modern

Divine Dante

science, on the other hand, had not yet found its own place for them. Those antiquarians, you could say, were doing pre-science. Mr Manguel's imagination occupies a similar in-between space, somewhere between fantasy and knowledge. Few readers have collected more curiosities from the world of books than he has. Do not bet your life on everything "Curiosity" tells you. Relish the celebration of Dante and treat the rest like an antiquarian's cabinet. ■

Caring about the dead and the dying

How to remember

Bettyville: A Memoir. By George Hodgman. *Viking Adult; 288 pages; $27.95*

The Light of the World: A Memoir. By Elizabeth Alexander. *Grand Central Publishing; 224 pages; $26*

PEOPLE preserve their loved ones in creative ways. Henry Ford so admired his friend Thomas Edison that he supposedly trapped his last breath in a test tube. Others wield their pens in tribute. Two new memoirs try to capture the essence of the people the authors love but have lost.

Elizabeth Alexander, a professor of African-American studies at Yale and author of several books of poems and essays, is best known for composing "Praise Song for the Day", a poem for Barack Obama's inauguration in 2009. Her tender memoir hinges on a different historic day in her own life, when her Eritrean ▸▸

husband, Ficre Ghebreyesus, suddenly died of heart disease, only four days after his 50th birthday. One of their sons found him unresponsive by the treadmill in their basement in New Haven, Connecticut.

"The Light of the World" is a story about the shock of sudden loss and forging forward afterward. It is part poetic elegy, part scrapbook. She pins snippets of poems that evoke their marriage and family, and recipes that Ficre, a chef and prolific painter, enjoyed, onto an impressionistic canvas. Their home was a hearth, where everyone gathered to enjoy food and laughter. As artists, Ms Elizabeth and her husband shared a bond. "He painted to fix something in place," she writes. "And so I write to fix him in place, to pass time in his company, to make sure I remember, even though I will never forget."

Ms Alexander is at her best when she evokes sweeping emotional tracks through simple imagery. In the hospital room immediately after her husband is declared dead, she focuses on his penis lying against his thigh, "which is mine alone...The penis with which he actually made the human beings who are our children, is sign and symbol and substance of what I have lost." Ms Alexander's meditations are mostly personal, but her book asks bigger questions, such as how to cope with death when there are no set rules to guide her.

George Hodgman, a former editor at *Vanity Fair* who leaves New York to care for his nonagenarian mother, Betty, in Missouri, also desperately seeks structure. Betty has mild dementia and a temper, but she wants her son to stay with her so that she can continue living at home. In Missouri Mr Hodgman is a misfit, but writes with humour and self-mockery that bring levity to the painful, central subject of "Bettyville": caring for a parent on the threshold of death.

Betty's frail exterior masks her fieriness. "I'm 90 years old and everybody in town is telling me what to do!" she harrumphs. Mr Hodgman's portrayal of his mother is chillingly accurate. He captures a generation of widows who came of age at a time when it was taboo to air vulnerabilities and emotions. Mr Hodgman is gay and cosmopolitan, but he only talks about his sexuality once with Betty, who confesses his father had never discussed it with her, even privately. Betty was a loving, if unsentimental, mother. She wears a locket with pictures of strangers in it, never having replaced the stock photos. She signs birthday cards to her closest friends with her full name.

"Bettyville" is a moving book about what remains unsaid and undone. Ms Alexander's memoir is more uplifting. Both books are occasionally sentimental, but so are most mourners when they recollect their loved ones. Even in their faults, these memoirs feel authentic and true. ■

New fiction

Born to be wild

The Wolf Border. By Sarah Hall. *Harper; 435 pages; $25.99. Faber & Faber; £17.99*

THIS new novel by Sarah Hall, whose earlier work has twice been nominated for the Man Booker prize, makes for rapacious reading. Like her debut, "Haweswater", "The Wolf Border" is set in her birth place, Cumbria, and revolves around the zealous plans of the Earl of Annerdale to introduce "the god of all dogs", the wolf, to his estate. As those surrounding the project get pulled into its orbit, the lives of wolves become entwined with the lives of men; political games, murky truths and the ever problematic dynamics of family are laid bare in an absorbing page-turner.

The story's protagonist is Rachel Caine, a wolf expert who has spent most of the last decade on a remote reservation in Idaho. She returns home to the Lake District to take on the ambitious rewilding project but also to confront her past. Together with her half-brother Lawrence, they try to move out of the shadow left by their toxic mother Binny, with her "body made to ruin men", who had moved them to the area as children and was "practically Roman in her operations: arriving in the village, taking the spoils, then razing everything to the ground." As adults, Lawrence and Rachel must take responsibility for the people they have become. Lawrence struggles with the demons that punctuate his seemingly normal life and Rachel must address her own destructive tendencies if she is to form real relationships and become a mother herself.

It is a compelling, psychological drama; one that perhaps dominates to the detriment of other parts of the book. A storyline involving a protester in a wolf mask and sinister threats aimed at the project is never resolved and the darker side of the earl's family does not feel fully explored. Nonetheless, Rachel's journey is unfeigned and captivating and Ms Hall's writing demands recognition. She has a golden touch, texturing her pages with rich metaphor and lyrical prose, especially when it comes to the natural world and the Annerdale estate with its "russet ferns and the knitted furze", where the wolves appear, "smoking through the brown bracken..." and a wolf's "pale coat glows in the winter gloom like halogen."

Ms Hall has deftly taken on a smorgasbord of real, current issues. The reintroduction of keystone creatures into Britain, including beavers, lynx and wolves, is part of a rewilding movement that has been gathering momentum in recent years. Many of the characters in the book will also be familiar from the current political climate, from the "beige Etonians" ruling the country to Scotland's tartan warriors calling for independence.

But in the hinterland between truth and fiction the author is able to examine the emotion behind the issue and the people behind the politics. The earl, "a behemoth among ordinary men", is a study of power and the old boys' club. Although Ms Hall's commentary on the House of Lords feels a bit outdated—hereditary peers no longer dominate—her point remains strong and unequivocal. England is "a country particularly owned". This is dangerous even if it may be the only way for Britain to return to owning a truly untamed place, "where the streetlights end and wilderness begins. The wolf border."

Tenders

Republic of Kosovo

GENERAL PROCUREMENT NOTICE

NAME OF PROJECT: CONSTRUCTION/UPGRADING OF MILLOSHEVË – MITROVICA M2 MAIN ROAD (26.7KM) SECTOR: INFRASTRUCTURE
MODE OF FINANCING: ISTISNA'A FINANCING NO.: ZKS0002

The Republic of Kosovo has received financing in the amount of USD 20.0 million equivalent from the Islamic Development Bank toward the cost of the Upgrading of the Millosheve – Mitrovice M2 Road Project, and it intends to apply part of the proceeds to payments for goods, works, related services and consulting services to be procured under this project. This project will be jointly financed by the OPEC Fund for International Development (OFID) and Saudi Fund for Development (SFD).

The project will include the following components:
1) Civil Works: Upgrading of the Milloshevë– Mitrovica M2 Main Road (26.7km)
2) Consultancy services for Construction Supervision 3) Financial Audit of the Project
4) Project Management Unit 5) Project Startup

Workshop and Familiarization visit to IDB HQ. Procurement of Civil Works:
http://www.dgmarket.com/tenders/np-notice.do?noticeId=125083731/23/30/2015

GENERAL PROCUREMENT NOTICE (ZKS002) - dgMarket contracts financed by the Islamic Development Bank will be conducted through International Competitive Bidding (ICB) with Prequalification of Bidders as specified in the Guidelines for Procurement of Goods and Works under Islamic Development Bank Financing (current edition), and is open to all eligible bidders as defined in the guidelines. Consulting services will be selected from a shortlist of international consultancy firms as outlined in the Guidelines for the Use of Consultants under Islamic Development Bank Financing (current edition).

Specific procurement notices for contracts to be bid under the Islamic Development Bank's international competitive bidding (ICB) procedures and for contracts for consultancy services will be announced, as they become available, in IsDB Website as well as in international and local newspapers of wide circulation. Prequalification of suppliers and contractors will be required for Civil Works contract for Upgrading of the Milloshevë–Mitrovica M2 Main Road (26.7km).

Interested eligible bidders who wish to be included on the mailing list to receive invitations to prequalify/bid under ICB procedures, and interested consultants who wish to receive a copy of advertisement requesting expressions of interest for consultancy contracts, or those requiring additional information, should contact the address below and not the Bank.

For clarification purposes, the Employer's address is:

Ministry of Infrastructure Attention
Mr. Nexhat Krasniqi, Director of the Procurement Department Address,
Ex Germia building, Mother Theresa Street N.n., Prishtina, 10000, Republic of Kosovo
Telephone: +381 38 200 28 022
Email: nexhat.krasniqi@rks-gov.net **Web page:** www.krpp-gov.net

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EXPRESSIONS OF INTEREST
FSD AFRICA – FINANCIAL FRONTIERS CHALLENGE FUND

FSD Africa (FSDA), a financial sector deepening trust, aims to support financial sector development across the African continent by encouraging skills development, transfer of knowledge (e.g. research, business models, policy approaches etc.) across borders, and by building the capacity of financial systems. FSDA's largest single budgetary allocation in its strategic plan is for change management projects to strengthen organisational capacity in banks and other FSPs.

FSDA wishes to identify and contract a consultancy or advisory firm to design and manage an FSDA-funded challenge fund ("Challenge Fund") that will attract competitive proposals from financial service providers (FSPs) in sub- Saharan Africa ("SSA") aimed at increasing access to financial services in SSA.

The Challenge Fund will seek to:
- provide FSPs with resources to allow them to carry out a diagnostic of their core capabilities and capacity building needs
- incentivise FSPs in SSA to develop compelling proposals and implement strategies that will have an impact on financial inclusion
- encourage FSPs to partner with competent consultants and advisory firms across SSA on both proposal – writing and subsequent project implementations
- stimulate markets in at least three service industries that are important for FSPs : data analytics, e-learning and executive coaching
- build a pipeline of projects for FSDA that are in alignment with its strategic objectives
- build FSDA's brand and project its role as a catalyst for financial sector development in SSA

EOIs should contain:
- names, CVs and location of key individuals
- an outline of team structure
- a short statement of why you believe your firm has the right experience and blend of expertise for this assignment
- a short description of anticipated risks and how you would expect to deal with these
- confirmation of your firm's availability to carry out this work, giving details of any prior calls on your firm's time
- any other information that you believe should be taken into account in the shortlisting process

Please note – a fully costed proposal and/or detailed work plan is not required at this stage.

Your EOI should not exceed 3 sides of A4 (font size 11), excluding CVs, company brochures etc. EOIs should be sent to **info@fsdafrica.org** under a subject line reading **"Expression of interest: Financial Frontiers Challenge Fund"**. Detailed EOI can be obtained from FSD Africa's website **www.fsdafrica.org** (opportunities section)

Expressions of interest must be received by FSD Africa no later than 1200 (EAT), Tuesday 19th May, 2015

Tenders

TANZANIA PORTS AUTHORITY

ADVERTISEMENT
REQUEST FOR PROPOSAL (RFP)

TITLE: PROVISION OF CONSULTANCY SERVICES TO SUPPORT THE PREPARATION AND IMPLEMENTATION OF THE DAR ES SALAAM MARITIME GATEWAY PROGRAM (DMGP)
NUMBER: PRQ20141497

On behalf of Tanzania Port Authority (TPA), TradeMark East Africa (TMEA) seeks to contract a consultancy firm to provide a Port Engineer and a contract management specialist for the Dar Es Salaam Maritime Gateway Program (DGMP).
The Request for proposal (RFP) document can be obtained at www.trademarkea.com. All queries quoting the above Tender Title and Number in the email subject should be emailed to procurement@trademarkea.com.
The closing date for submission is **4th May 2015** no later than 10.00 a.m. Tanzania/ local time.

TRADE MARK EAST AFRICA
Growing Prosperity Through Trade

classified@quantum-productions.co.uk

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PREQUALIFICATION ANNOUNCEMENT

TENDER TITLE: DEVELOPMENT OF BUSINESS PLAN FOR TRADEMARK EAST AFRICA CATALYTIC INFRASTRUCTURE INVESTMENT FACILITY
TENDER NUMBER: PRQ20141540

The 3rd East Africa Community (EAC) Heads of State Infrastructure Retreat, held in November 2014, identified $100 billion of priority regional infrastructure projects to be commenced within the next decade. To enhance its ability to act strategically to advance transport projects in support of this effort, TradeMark East Africa (TMEA) seeks to contract a reputable consultancy firm to enable it to appraise, design and launch a long-term investment facility (termed the TradeMark Catalytic Infrastructure Investment Facility, or TCIIF).
Terms of reference and prequalification document can be obtained at TMEA's website www.trademarkea.com.
Any queries should be directed to procurement@trademarkea.com. The closing date for submissions is **4th May 2015 (noon Kenya/ local time)**.
Interested and qualified firms must register and apply online ONLY on the TMEA procurement portal at the website: http://procurement.trademarkea.com . All attachments must be 5MB or less. Only shortlisted bidders shall be notified.

No response shall be given for queries submitted less than 7 days prior to submission deadline.

classified@quantum-productions.co.uk

RSB
Rwanda Standards Board

RE-ADVERTISEMENT
INVITATION TO TENDER (ITT)

TITLE: SUPPLY, DELIVERY, COMMISSIONING AND AFTER-SALES SERVICES FOR LABORATORY EQUIPMENT – RWANDA
NUMBER: PO 20140957

The Rwanda Standards Board (RSB) with support from TradeMark East Africa (TMEA) seeks to engage the services of a firm/consortium to supply, deliver and commission equipment for laboratories.

The tender document and the application form can be obtained at TradeMark East Africa's website http://www.trademarkea.com/get-involved/procurement/. Interested and qualified firms/consortiums must register online on the TradeMark East Africa procurement portal at the website: http://procurement.trademarkea.com. Bids quoting the above Tender **Title** and **Number** should be emailed to procurement@trademarkea.com. All email attachments must be 5MB or less. Any queries must be directed to procurement@trademarkea.com.

Only applications from firms/consortiums shall be accepted. The closing date for submission is 11TH May 2015

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TMEA cannot answer any query relating to this tender three days or less prior to the submission deadline.

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REQUEST FOR PROPOSAL (RFP) FOR INFORMATION TECHNOLOGY REVIEW AND DIAGNOSTIC STUDY

PTA BANK is a regional development financial institution with its headquarters in Bujumbura (Burundi) and regional offices in Nairobi (Kenya), Ebene (Mauritius) and Harare (Zimbabwe). The Bank's main product lines comprise of Trade Finance and Project & Infrastructural Finance and to a lesser extent, equity finance and guarantees. In its continued efforts to become the preferred development finance institution of choice in the Eastern and Southern African region and beyond, PTA Bank seeks to undertake a review and diagnostic study to assess its Information Technology automation requirements.

PTA Bank is, in this connection, inviting qualified and experienced consulting firms to submit proposals to undertake the study. For the detailed Request for Proposal (RFP), please visit the PTA Bank website at www.ptabank.org. Proposals will be accepted on or before 4th May, 2015 [5 p.m., East African Time (GMT+3)]. Any proposals received after this date and time will not be considered. Further information is also obtainable upon email request directed to: Joy.Ntare@ptabank.org

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Economic data

% change on year ago

	Gross domestic product latest	qtr*	2015†	Industrial production latest	Consumer prices latest	2015†	Unemployment rate, %	Current-account balance latest 12 months, $bn	% of GDP 2015†	Budget balance % of GDP 2015†	Interest rates, % 10-year gov't bonds, latest	Currency units, per $ Apr 8th	year ago
United States	+2.4 Q4	+2.2	+3.0	+3.5 Feb	nil Feb	+0.3	5.5 Mar	-410.6 Q4	-2.2	-2.5	1.91	-	-
China	+7.3 Q4	+6.1	+6.9	+6.8 Feb	+1.4 Feb	+1.4	4.1 Q4§	+219.7 Q4	+2.7	-2.8	3.47§§	6.20	6.20
Japan	-0.8 Q4	+1.5	+1.0	-2.6 Feb	+2.2 Feb	+0.7	3.5 Feb	+46.6 Feb	+2.3	-6.9	0.36	120	102
Britain	+3.0 Q4	+2.5	+2.6	+1.2 Jan	nil Feb	+0.3	5.7 Dec††	-161.3 Q4	-4.5	-4.4	1.72	0.67	0.60
Canada	+2.6 Q4	+2.4	+2.0	+4.1 Jan	+1.0 Feb	+1.0	6.8 Feb	-39.3 Q4	-2.9	-1.8	1.34	1.25	1.09
Euro area	+0.9 Q4	+1.3	+1.4	+1.2 Jan	-0.1 Mar	+0.1	11.3 Feb	+290.6 Jan	+2.7	-2.2	0.16	0.93	0.72
Austria	-0.2 Q4	+0.4	+1.0	-0.1 Jan	+0.8 Feb	+0.9	5.3 Feb	+3.2 Q4	+1.5	-2.2	0.33	0.93	0.72
Belgium	+1.0 Q4	+0.7	+1.3	+0.9 Jan	-0.4 Mar	+0.2	8.5 Feb	+9.4 Dec	+0.5	-2.5	0.41	0.93	0.72
France	+0.2 Q4	+0.5	+1.1	+0.6 Jan	-0.3 Feb	+0.1	10.6 Feb	-19.7 Jan‡	-0.9	-4.2	0.47	0.93	0.72
Germany	+1.5 Q4	+2.8	+1.8	-0.3 Feb	+0.3 Mar	+0.3	6.4 Mar	+290.1 Feb	+7.6	+0.7	0.16	0.93	0.72
Greece	+1.2 Q4	-1.5	+1.8	+0.1 Jan	-2.2 Feb	-0.9	26.0 Dec	+1.7 Jan	+2.7	-3.4	11.48	0.93	0.72
Italy	-0.5 Q4	-0.1	+0.5	-2.2 Jan	-0.1 Mar	+0.1	12.7 Feb	+42.6 Jan	+1.9	-3.0	1.21	0.93	0.72
Netherlands	+1.4 Q4	+3.2	+1.5	-1.5 Jan	+0.4 Mar	+0.2	8.9 Feb	+90.2 Q4	+9.2	-2.0	0.32	0.93	0.72
Spain	+2.0 Q4	+2.7	+2.4	-2.0 Jan	-0.7 Mar	-0.6	23.2 Feb	+11.3 Jan	+0.4	-4.5	1.18	0.93	0.72
Czech Republic	+1.2 Q4	+1.5	+2.9	+2.9 Jan	+0.2 Mar	+0.2	7.2 Mar§	+1.4 Q4	-0.4	-1.7	0.44	25.4	19.9
Denmark	+1.5 Q4	+2.1	+1.6	-1.2 Jan	+0.2 Feb	+0.7	4.9 Feb	+22.0 Feb	+5.6	-3.0	0.29	6.93	5.41
Hungary	+3.4 Q4	+3.2	+2.8	+6.0 Feb	-0.6 Mar	+1.0	7.7 Feb§††	+5.7 Q4	+4.6	-2.6	3.20	275	221
Norway	+3.2 Q4	+3.7	+1.0	-1.1 Jan	+1.9 Feb	+1.4	3.9 Jan‡‡	+42.5 Q4	+11.3	+7.5	1.42	8.06	5.98
Poland	+2.8 Q4	+2.8	+3.3	+4.9 Feb	-1.6 Feb	+0.4	11.7 Mar§	-6.3 Jan	-2.0	-1.4	2.27	3.72	3.02
Russia	+0.4 Q4	na	-4.1	-1.4 Feb	+16.9 Mar	+15.2	5.8 Feb§	+59.5 Q4	+3.7	-2.3	11.41	53.6	35.7
Sweden	+2.6 Q4	+4.6	+2.6	-3.9 Feb	+0.1 Feb	+0.2	8.4 Feb§	+35.7 Q4	+5.9	-1.3	0.41	8.67	6.50
Switzerland	+1.9 Q4	+2.4	+0.9	+2.7 Q4	-0.9 Mar	-0.9	3.2 Feb	+49.1 Q4	+7.8	+0.3	-0.06	0.97	0.88
Turkey	+2.6 Q4	na	+3.4	+1.0 Feb	+7.6 Mar	+6.6	10.9 Dec§	-42.9 Jan	-4.5	-1.7	8.19	2.60	2.10
Australia	+2.5 Q4	+2.2	+2.5	+3.3 Q4	+1.7 Q4	+1.7	6.3 Feb	-40.1 Q4	-3.0	-2.3	2.33	1.30	1.07
Hong Kong	+2.2 Q4	+1.5	+2.5	-3.7 Q4	+4.6 Feb	+3.3	3.3 Feb‡‡	+5.6 Q4	+1.8	+0.1	1.43	7.75	7.75
India	+7.5 Q4	+4.0	+7.5	+2.6 Jan	+5.4 Feb	+5.2	8.8 2013	-27.4 Q4	-0.9	-4.1	7.79	62.2	60.1
Indonesia	+5.0 Q4	na	+5.2	+5.0 Jan	+6.4 Mar	+5.9	5.9 Q3§	-26.2 Q4	-3.1	-1.9	7.32	12,962	11,255
Malaysia	+5.8 Q4	na	+5.5	+7.0 Jan	+0.1 Feb	+2.9	3.1 Jan§	+15.2 Q4	+3.4	-4.4	3.87	3.63	3.24
Pakistan	+5.4 2014**	na	+5.7	+1.1 Jan	+2.5 Mar	+4.6	6.2 2013	-3.5 Q4	-0.6	-5.1	9.35†††	102	97.2
Singapore	+2.1 Q4	+4.9	+3.1	-3.6 Feb	-0.3 Feb	+0.4	1.9 Q4	+58.8 Q4	+22.2	-0.7	2.10	1.36	1.25
South Korea	+2.7 Q4	+1.1	+3.2	-4.7 Feb	+0.4 Mar	+1.1	4.6 Feb§	+94.4 Feb	+7.7	+0.5	2.11	1,093	1,051
Taiwan	+3.3 Q4	+4.8	+3.8	+3.3 Feb	-0.6 Mar	+1.0	3.7 Feb	+65.3 Q4	+12.3	-1.2	1.53	31.1	30.3
Thailand	+2.2 Q4	+7.1	+3.9	+3.6 Feb	-0.6 Mar	+1.3	0.8 Feb§	+14.2 Q4	+2.3	-1.9	2.61	32.6	32.3
Argentina	+0.4 Q4	+0.1	-0.8	-2.1 Feb	— ***	—	6.9 Q4§	-5.1 Q4	-1.4	-3.1	na	8.85	8.00
Brazil	-0.2 Q4	+1.3	-0.9	-9.1 Feb	+8.1 Mar	+7.6	5.9 Feb§	-89.8 Feb	-3.9	-5.3	12.58	3.05	2.20
Chile	+1.8 Q4	+3.8	+3.0	-0.5 Feb	+4.2 Mar	+3.6	6.1 Feb§‡‡	-3.0 Q4	-1.5	-2.0	4.52	612	546
Colombia	+3.5 Q4	+2.9	+3.9	-2.5 Jan	+4.6 Mar	+3.9	9.9 Feb§	-19.8 Q4	-6.1	-2.1	6.79	2,492	1,933
Mexico	+2.6 Q4	+2.7	+2.9	+0.3 Jan	+3.0 Feb	+3.1	4.5 Feb	-26.5 Q4	-2.3	-3.4	5.62	14.9	13.1
Venezuela	-2.3 Q3	+10.0	-3.2	+0.8 Sep	+68.5 Dec	+65.9	7.9 Jan§	+10.3 Q3	-1.8	-15.1	11.03	6.30	6.35
Egypt	+4.3 Q4	na	+4.0	-5.3 Jan	+11.5 Mar	+9.7	12.9 Q4§	-5.8 Q4	-1.3	-10.7	na	7.63	6.97
Israel	+3.3 Q4	+6.8	+3.5	+0.6 Jan	-1.0 Feb	-0.2	5.3 Feb	+9.0 Q4	+4.8	-3.0	1.47	3.93	3.48
Saudi Arabia	+3.6 2014	na	+2.5	na	+2.1 Feb	+2.7	6.0 2014	+120.1 Q3	-1.7	-10.4	na	3.75	3.75
South Africa	+1.3 Q4	+4.1	+2.1	-1.5 Jan	+3.9 Feb	+4.5	24.3 Q4§	-19.1 Q4	-5.0	-3.7	7.62	11.8	10.5

Source: Haver Analytics. *% change on previous quarter, annual rate. †*The Economist* poll or Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. ***Official number not yet proven to be reliable; The State Street PriceStats Inflation Index, Feb 30.0%; year ago 32.22% †††Dollar-denominated bonds.

Markets

	Index Apr 8th	% change on one week	% change on Dec 31st 2014 in local currency	% change on Dec 31st 2014 in $ terms
United States (DJIA)	17,902.5	+1.2	+0.4	+0.4
China (SSEA)	4,187.7	+4.9	+23.6	+23.6
Japan (Nikkei 225)	19,789.8	+4.0	+13.4	+13.3
Britain (FTSE 100)	6,937.4	+1.9	+5.7	+1.1
Canada (S&P TSX)	15,213.6	+1.8	+4.0	-3.9
Euro area (FTSE Euro 100)	1,238.9	+0.8	+19.5	+6.6
Euro area (EURO STOXX 50)	3,742.6	+0.7	+18.9	+6.1
Austria (ATX)	2,590.4	+1.9	+19.9	+6.9
Belgium (Bel 20)	3,831.1	+2.4	+16.6	+4.0
France (CAC 40)	5,136.9	+1.5	+20.2	+7.2
Germany (DAX)*	12,035.9	+0.3	+22.7	+9.5
Greece (Athex Comp)	767.9	+0.3	-7.1	-17.1
Italy (FTSE/MIB)	23,578.7	+0.9	+24.0	+10.6
Netherlands (AEX)	497.2	+1.5	+17.1	+4.5
Spain (Madrid SE)	1,182.4	+0.7	+13.4	+1.2
Czech Republic (PX)	1,047.6	+0.3	+10.7	-0.1
Denmark (OMXCB)	874.2	+1.5	+29.5	+15.1
Hungary (BUX)	20,804.9	+5.9	+25.1	+18.5
Norway (OSEAX)	691.5	+3.5	+11.6	+3.9
Poland (WIG)	54,647.1	+1.1	+6.3	+1.5
Russia (RTS, $ terms)	988.3	+8.6	+12.4	+25.0
Sweden (OMXS30)	1,686.8	+1.0	+15.2	+4.1
Switzerland (SMI)	9,247.8	+1.2	+2.9	+5.9
Turkey (BIST)	82,799.4	+2.0	-3.4	-12.9
Australia (All Ord.)	5,928.3	+1.6	+10.0	+3.5
Hong Kong (Hang Seng)	26,236.9	+4.6	+11.1	+11.2
India (BSE)	28,707.8	+1.6	+4.4	+5.8
Indonesia (JSX)	5,486.6	+0.4	+5.0	+0.3
Malaysia (KLSE)	1,850.3	+1.3	+5.1	+1.2
Pakistan (KSE)	31,887.3	+4.2	-0.8	-2.1
Singapore (STI)	3,460.7	+0.4	+2.8	+0.5
South Korea (KOSPI)	2,059.3	+1.5	+7.5	+8.3
Taiwan (TWI)	9,572.0	+0.7	+2.8	+4.5
Thailand (SET)	1,544.9	+1.3	+3.2	+4.3
Argentina (MERV)	11,275.0	+1.8	+31.4	+25.9
Brazil (BVSP)	53,661.1	+2.6	+7.3	-7.7
Chile (IGPA)	19,398.0	+1.1	+2.8	+1.9
Colombia (IGBC)	10,236.2	+0.6	-12.0	-16.2
Mexico (IPC)	44,980.6	+1.8	+4.3	+3.0
Venezuela (IBC)	5,390.3	-1.1	+39.7	na
Egypt (Case 30)	8,788.9	-3.4	-1.5	-7.7
Israel (TA-100)	1,443.6	+1.6	+12.0	+10.8
Saudi Arabia (Tadawul)	8,851.8	+1.4	+6.2	+6.3
South Africa (JSE AS)	52,806.0	+1.0	+6.1	+3.6

The Economist poll of forecasters, April averages (previous month's, if changed)

	Real GDP, % change Low/high range 2015	Low/high range 2016	Real GDP average 2015	average 2016	Consumer prices % change 2015	2016	Current account % of GDP 2015	2016
Australia	1.9/3.0	2.3/3.5	2.5 (2.6)	2.9 (3.1)	1.7	2.7	-3.0 (-2.8)	-2.5 (-2.4)
Brazil	-2.0/-0.3	0.5/2.3	-0.9 (-0.4)	1.2 (1.4)	7.6 (6.9)	5.9 (7.1)	-3.9	-3.7 (-3.8)
Britain	2.4/2.8	1.9/3.1	2.6	2.4	0.3 (0.5)	1.7 (1.8)	-4.5 (-4.3)	-3.8 (-3.7)
Canada	1.4/2.9	1.5/2.8	2.0 (2.1)	2.1 (2.3)	1.0 (1.2)	2.1	-2.9 (-2.5)	-2.6 (-2.1)
China	6.5/7.3	6.2/7.4	6.9 (7.0)	6.7 (6.9)	1.4 (1.7)	2.0 (2.2)	2.7	2.6 (2.5)
France	0.7/1.3	0.8/2.1	1.1 (0.9)	1.5 (1.4)	0.1	1.1 (1.2)	-0.9 (-1.1)	-0.7 (-1.0)
Germany	1.1/2.5	1.5/3.0	1.8 (1.6)	1.9 (1.8)	0.3 (0.2)	1.6	7.6 (7.2)	7.3 (6.7)
India	6.3/8.1	6.8/8.9	7.5 (6.7)	7.9 (7.1)	5.2 (5.0)	5.4 (5.3)	-0.9 (-1.3)	-1.0 (-1.5)
Italy	0.1/0.9	0.3/1.6	0.5	1.1	0.1 (nil)	1.0	1.9 (1.7)	1.9 (1.7)
Japan	0.4/1.6	1.0/2.2	1.0 (1.1)	1.7	0.7 (0.9)	1.1 (1.4)	2.3 (1.6)	2.4 (1.7)
Russia	-5.6/-3.0	-2.5/2.0	-4.1 (-4.0)	0.2 (-0.2)	15.2 (13.6)	6.9 (6.5)	3.7 (3.5)	3.9 (3.2)
Spain	1.4/3.0	1.3/3.0	2.4 (2.1)	2.2 (2.0)	-0.6	1.1	0.4 (0.5)	0.4 (0.6)
United States	2.5/3.4	2.4/3.5	3.0 (3.2)	2.8 (2.9)	0.3 (0.4)	2.1 (2.3)	-2.2	-2.3
Euro area	1.1/1.8	1.1/2.5	1.4 (1.3)	1.7 (1.6)	0.1 (nil)	1.2	2.7 (2.4)	2.6 (2.3)

Sources: Bank of America, Barclays, BNP Paribas, Citigroup, Commerzbank, Credit Suisse, Decision Economics, Deutsche Bank, Economist Intelligence Unit, Goldman Sachs, HSBC, ING, Itaú BBA, JPMorgan, Morgan Stanley, Nomura, RBC, RBS, Schroders, Scotiabank, Société Générale, Standard Chartered, UBS. For more countries, go to: Economist.com/markets

Other markets

	Index Apr 8th	% change on one week	% change on Dec 31st 2014 in local currency	% change on Dec 31st 2014 in $ terms
United States (S&P 500)	2,081.9	+1.1	+1.1	+1.1
United States (NAScomp)	4,950.8	+1.4	+4.5	+4.5
China (SSEB, $ terms)	315.7	+1.4	+8.6	+8.6
Japan (Topix)	1,588.5	+3.9	+12.9	+12.8
Europe (FTSEurofirst 300)	1,611.7	+1.4	+17.8	+5.0
World, dev'd (MSCI)	1,766.4	+1.6	+3.3	+3.3
Emerging markets (MSCI)	1,021.0	+3.9	+6.8	+6.8
World, all (MSCI)	432.5	+1.9	+3.7	+3.7
World bonds (Citigroup)	882.8	+0.1	-2.2	-2.2
EMBI+ (JPMorgan)	716.6	+1.0	+3.6	+3.6
Hedge funds (HFRX)	1,249.0§	+0.4	+2.5	+2.5
Volatility, US (VIX)	14.0	+15.1	+19.2	(levels)
CDSs, Eur (iTRAXX)†	55.8	-0.5	-10.9	-20.5
CDSs, N Am (CDX)†	60.5	-5.4	-3.2	-3.2
Carbon trading (EU ETS) €	7.2	-0.6	-1.9	-12.5

Sources: Markit; Thomson Reuters. *Total return index. †Credit-default-swap spreads, basis points. §Apr 7th.

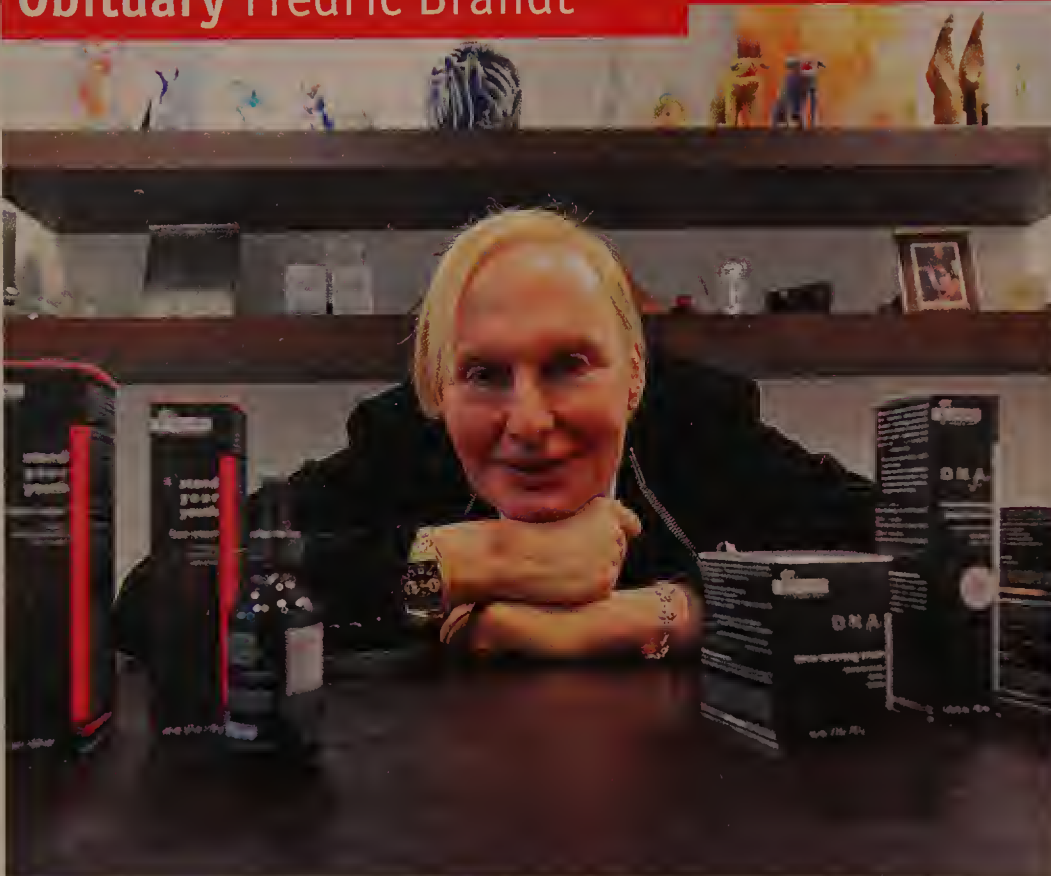
Indicators for more countries and additional series, go to: **Economist.com/indicators**

The Economist commodity-price index

2005=100

	Mar 31st	Apr 7th*	% change on one month	% change on one year
Dollar Index				
All Items	141.4	143.1	+0.6	-17.8
Food	157.2	160.0	-0.3	-21.6
Industrials				
All	124.9	125.6	+1.7	-12.0
Nfa†	118.6	120.1	+1.1	-20.6
Metals	127.7	128.0	+1.9	-8.0
Sterling Index				
All items	173.2	175.0	+2.0	-7.4
Euro Index				
All items	163.7	163.9	-0.8	+4.5
Gold				
$ per oz	1,224.0	1,213.1	+4.4	-7.4
West Texas Intermediate				
$ per barrel	52.0	53.8	+10.5	-47.6

Sources: Bloomberg; CME Group; Cotlook; Darmenn & Curl; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Thomson Reuters; Urner Barry; WSJ. *Provisional †Non-food agriculturals.



Fredric Brandt

Frederic Brandt, a celebrity dermatologist, died on April 5th aged 65

BEAUTY—however imagined—is in the eye of the beholder. But why settle for nature's whim when you can pay a professional? The mirrors in Fredric Brandt's clinics showed the possibilities, and the profits, to be gained from the skilful application of needle and syringe. The masterpieces of modern art on the walls highlighted his aesthetic tastes, just as his handiwork on his patients' faces displayed his craftsmanship.

Only the charlatans he despised would claim to stop ageing. What he could offer was a partial respite: why look tired, sad or angry when the lips can turn up, not down, and wrinkles can be smoothed into temporary oblivion? It took only a few minutes (for he could see 40 patients a day) twice a year, and a few hundred dollars each time.

That was at least twice the price charged by some other doctors (though discounts were available for the indigent or famous). But money was only part of the mix. Getting a personal appointment at his clinic was a social triumph: like having a prime table at a sought-after restaurant. And celebrity status without science would be useless. He treasured his academic prowess: conference speeches and papers, and an in-house laboratory that carried out clinical trials on potions and lotions, as well as researching exciting new laser, ultrasound and stem cell treatments.

It was a big change from the dermatological drudgery he encountered as a young doctor. In those days skin medicine meant dealing with sunspots, moles and unsightly infections. Botulinum toxin was known chiefly as a deadly nerve poison: it took Dr Brandt to make it a household name, for in minute doses it is a boon, freezing the muscles that furrow and crinkle. His clinics were the world's largest buyer of Botox; he called it simply "bo".

Bo and the gels could work wonders. They smoothed foreheads, filled cheeks, tightened necks, strengthened jawlines and plumped lips—all in moderation, for the aim was to look "fabulous, not frozen". But the really secret serum, he insisted, was joy. His clients should not just look better, but feel it too. As he jabbed and pumped, he would sing Broadway numbers, particularly "Younger Than Springtime".

He liked to call himself a sculptor of faces. But he did not cut or chisel. That was the work of the plastic surgeons who had pioneered beauty treatment, sawing away outsize noses and tightening withered skin over unforgiving cheekbones, via a general anaesthetic, scars and bruising. He did not criticise his sawbones colleagues, but he thought his own countenance showed that the needle worked better than the knife. Visitors sceptical of his strangely smooth skin would be invited to check behind his ears for the telltale signs of a facelift.

Some thought his strange appearance exemplified the cost of battling the years. His pneumatic features and eerie complexion could seem repellent: an alien doctor from a visiting starship, perhaps. Others thought his wispy blond hair and fair skin might be a sign of Scandinavian roots. He laughed at that: he was a Jewish orphan whose parents had run a confectionery shop in Newark; his appearance was a triumph, just like his career.

Critics muttered that the "Skincare Svengali", (as *Vogue* dubbed him, appreciatively), was engaged in a nightmarish science project, making a fortune from human weakness. Better, surely to grow old gracefully and naturally. But his patients saw it differently. They wanted to feel better about themselves, to remember the people they had been—and to stay competetive in a society that prizes only youthful beauty. Laurin Sydney, a television journalist, said he helped her extend her career 18 years after her "sell-by date". Madonna told the *New York Times*: "If I have nice skin, I owe a lot to him."

The "Baron of Botox" had a weekly radio show, and a range of cosmetic products, whose catchy names (Needles No More, Crease Release) were matched by exotic prices and carefully worded claims about their effects. He wrote two well-received books: "Age-less: The Definitive Guide to Botox, Collagen, Lasers, Peels, and Other Solutions for Flawless Skin"—launched in a New York nightclub where guests were told to wear only white to match the bookjacket—and "10 Minutes/10 Years: Your Definitive Guide to a Beautiful and Youthful Appearance".

Timor senescentis

Irony and the beauty business rarely mix easily. But Dr Brandt tried not to take himself too seriously. "If it moves, my patients want it frozen; if it deflates, they want it filled up; and if it droops, they want it lifted," he once quipped. Appreciative clients said a session at his clinic could fix your laughter lines—or give you more.

But he was mortified when an episode of a new comedy show lampooned a deranged, pretentious and Botox-loving beauty doctor—seemingly a direct caricature of him. Friends denied that this prompted his suicide; he had suffered from depression for some time.

Dr Brandt did not like discussing his great adversary: age—and the frailty and loneliness it brought—frightened him. He lived alone, with three adopted stray dogs in Miami, and his collection of modern art in New York, sheltered by permanently drawn curtains from the sunlight he hated for the damage it did to skin. ■